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PREFACE

Never before in modern times have we come to such terrific shocks as in 1991. India lost one of her most illustrious sons when Rajiv Gandhi was assassinated in Sriperumpudur during the mid-term election campaign. In the aftermath of the tragedy, verdict of the South went overwhelmingly in favour of the Congress party. The new government's revolutionary economic reconstruction programme has been made the COVER STORY of the Year.

The second shock was the temporary ouster of Mikhail Gorbachev from the corridors of power in the Soviet Union. The swiftness with which the Soviet people discarded communism and embarked on a tumultuous course towards market economy and democracy sent out shock-waves around the world. This, coupled with the portents of disintegration of the once super power, is treated as 'Topic of the Year'.

The honour for the Man of the Year goes to the world's number-one civil servant-Mr. Boutros Ghali, the new Secretary General of the United Nations. The Woman of the Year is none other than Medha Patkar-the indefatigable leader of the Narmada Bachao Andolan.

In this Decade of the Shelter, we thought it appropriate to make a study of the staggering problem of housing in India. This comprehensive study by experts is supported by a 16-page colour portfolio of cost-effective and innovative houses which we thought would be a lodestar for those who wish to construct a house of their own.

While the European community is inching towards final unity, Barcelona in Spain has become European centre-stage as the venue of the greatest show on earth-the 25th Olympiad which opens on July 25. We have a curtain raiser on the medal prospects. The Middle East Peace Conference also has been highlighted.

We are greatly pleased by the continued reader-interest in Manorama Year Book. Public support has kept it afloat as the largest selling Year Book in the country, now being published in English, Malayalam, Tamil and Hindi.

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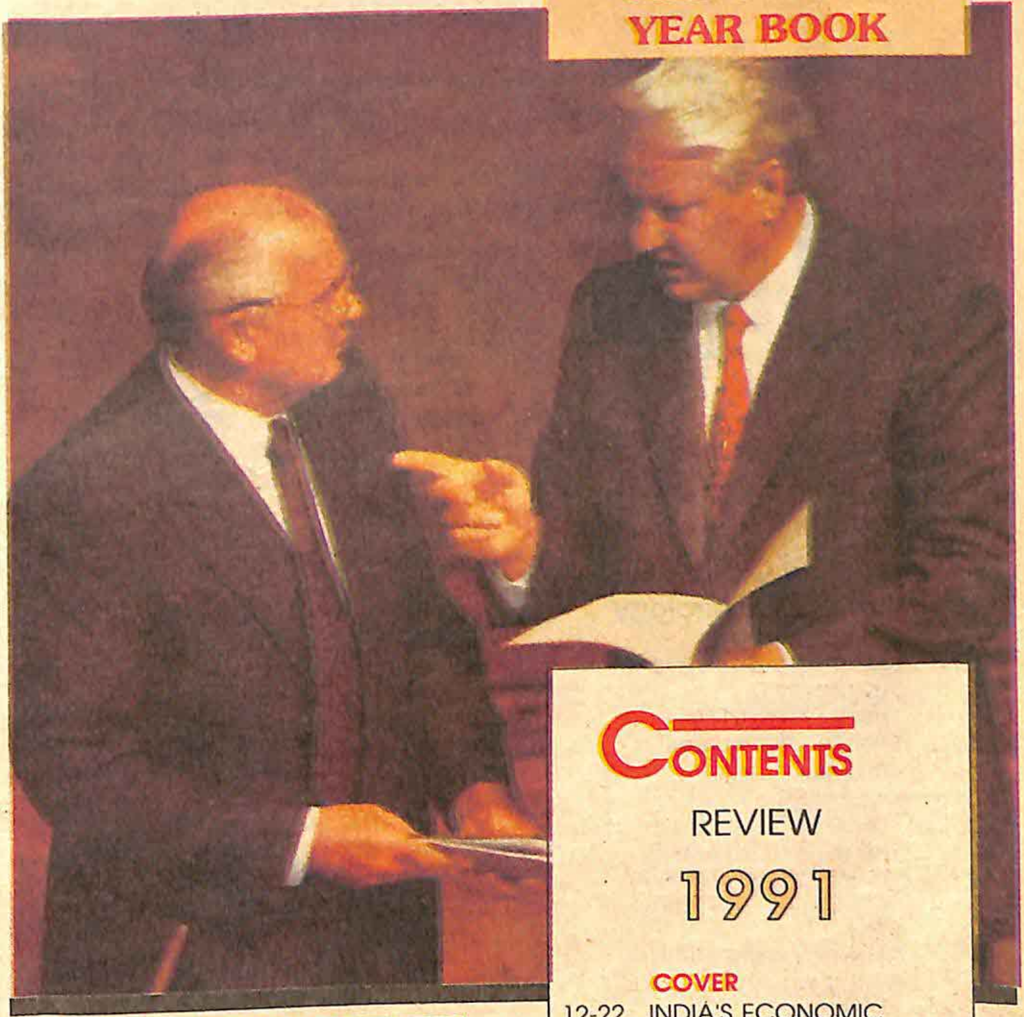

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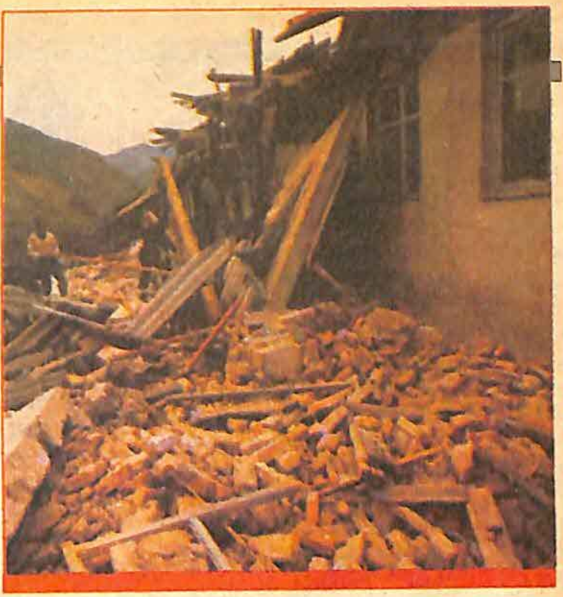

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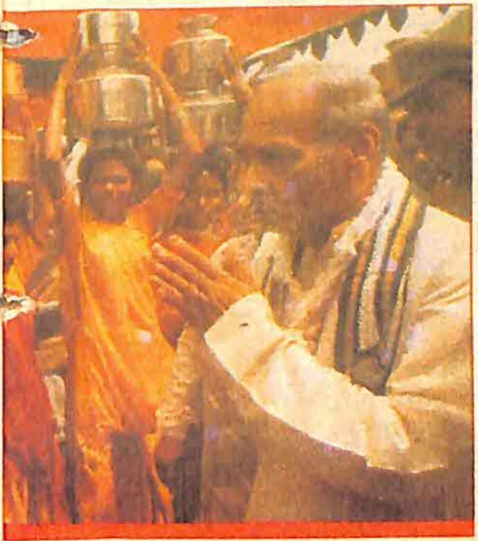

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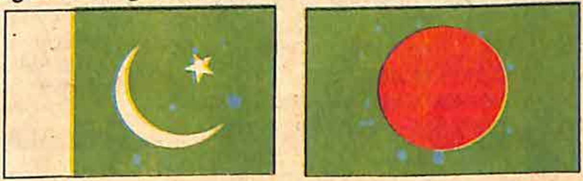

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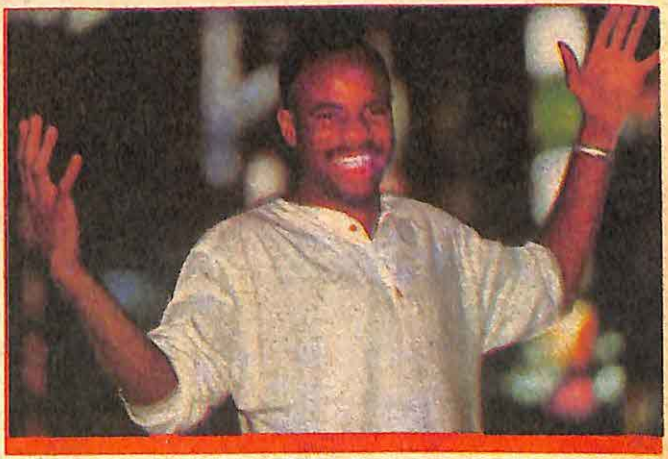

Mike Powell

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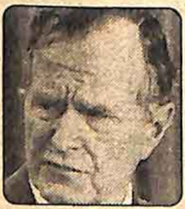

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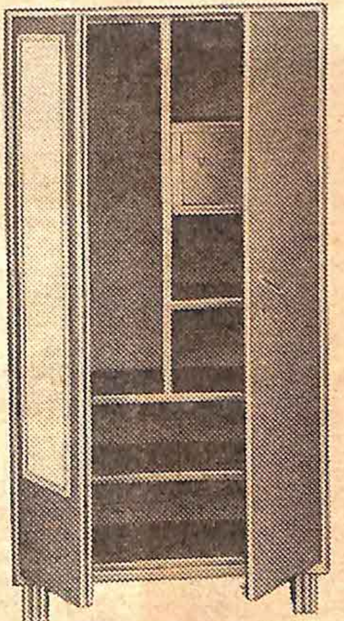

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INDIA'S ECONOMIC PERESTROIKA

There have been dramatic developments in economic policies of the Government of India over the last few months in the direction of deregulation and liberalisation, particularly in the areas of industry, foreign investment, trade and finance. The measures are aimed at improving the efficiency, productivity, competitiveness and export orientation of the economy so that it may attain its full growth potential and be in a position to integrate with the world economy. Simultaneously, an adjustment programme has been launched with a view to addressing imbalances in the country's internal and external accounts which have assumed serious dimensions over the last decade, and threaten to disrupt the process of growth and accentuate an already inflationary situation. Taken together, these measures, which will expand the role of the private sector and allow greater play to market forces, constitute a new phase in policy making that is likely to have far-reaching effects on the economy.

> Restructuring and reorienting economic policies on a comprehensive scale is a difficult task as the process disturbs entrenched interests who benefit from the status quo. The transition has to be handled with imagination and perseverance.

Industrial and trading circles as well as large sections of the media have welcomed these initiatives with varying degrees of enthusiasm. On the other hand, critics tend to regard several of these measures as ill-advised departures from the course of planned development on the ground, inter alia, that imperfect markets in a poor developing economy cannot ensure optimal allocation of resources. In their view, the new policies will de-emphasise the objective of self-reliance, weaken the public sector, reduce investment in the infrastructure, agriculture and rural development, benefit mainly the better off sections of the population and generally have an adverse impact on the poor.

The criticism has acquired a specially sharp edge as the new policies are perceived to have been induced by conditionality attached to the balance of payments (BOP) support being provided by the International Monetary Fund (the Fund). In that context, fears have been expressed that Fund prescriptions will cause contraction of economic activity and increase unemployment, that devaluation in conjunction with import liberalisation will add to inflation without improving the BOP and that reduction or elimination of subsidies and cuts in expenditure will harm the poor.

The unusually clear articulation of the new policies by the authorities has, not unexpectedly, provoked counter arguments resulting in a wide-ranging debate on the important issues involved. This article seeks to examine these policies and their rationale against the backdrop of the successes and failures of the plan strategy followed so far, the macro-imbalances that have emerged in the economy and the need for their correction, developments within India and abroad that provide the setting for adopting new approaches to economic development and conditions which will be conducive to their success.

India embarked on the course of planned development in 1951 with the objective of achieving a self-reliant socialistic pattern of society through eco-

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nomic growth with equity and social justice. The national Planning Commission was assigned the role of fixing targets and allocating resources for sectoral development and social welfare programmes. Within the framework of a mixed economy in which the public and the private sectors coexist, the role of the public sector was steadily enlarged so that it may occupy the 'commanding heights' in the economy, help fulfilment of development objectives in accordance with plan priorities, prevent concentration of wealth and economic power in private hands, and create surpluses for investment.

There was also the assumption that the private sector would not be able or willing to invest in large, long-gestation infrastructural and basic industry projects. This approach necessitated heavy reliance on the fiscal and credit systems for supporting the public sector which has accounted for 40-50 percent of the economy's capital formation over the last four decades.

The goal of self-reliance has had several implications. It required increasing domestic saving and reducing dependence on external resources. In the primary sector, it meant gaining self-sufficiency in foodgrains and other agricultural commodities. In the secondary sector, there has been a massive effort at import substitution, particularly through establishment of basic and capital goods producing industries, in order to lay the foundations of industrialisation and minimise the need for imports. A restrictive policy was followed with regard to foreign investment. Foreign technology was permitted to come in with the expectation that it would be assimilated so that repetitive imports were avoided.

Equity was sought to be achieved through progressive direct taxes, high indirect duties on goods regarded as luxuries and semi-luxuries with tax exemption or concessional rates for commodities of common consumption, as well as through expenditures on education, public health, subsidies, and poverty alleviation programmes. Outlays on agriculture and rural development were considered important also because of their beneficial impact on the rural population which has a high incidence of poverty. Reduction of regional disparities has been an important policy objective in pursuance of which efforts were made to provide larger central assistance to economically weaker States and incentives offered for location of industrial units in backward areas.

Over the last forty years of planned development the economy has made considerable progress but many weaknesses persist.

(a) Compared with the near stagnation of the first half of this century when the gross domestic product (GDP) is estimated to have risen at the rate of just 0.7 percent per annum, the first three decades since 1951 registered a growth rate of 3.5 percent. However, as population grew annually by a little above 2 percent, the per capita GDP rose at the unsatisfactory rate of only 1.4 percent considering the low base of average income and its skewed distribution. The 1980s saw the eocnomy move to a higher growth path, recording average yearly increase in GDP of 5.4 percent. Consequently, the growth rate of per capita income more than doubled to 3.3 percent demonstrating dramatically the benefical impact of higher growth on per capita welfare.

Still, the growth performace of the Indian economy was far below that of the newly industrialising economies of Asia, such as South Korea, Taiwan, Hong Kong and Singapore (7 percent or more over many years), China (which grew at 6 percent per annum for two decades upto 1978 after which its growth rate has been faster) and several South-East Asian countries including Malaysia, Thailand and Indonesia. In terms of per capita income, India ranks low in the group of developing countries.

(b) A remarkable achievement has been the attainment of self-sufficiency in foodgrains and several other agricultural commodities like sugarcane and cotton. There have been noteworthy increases in the production of fruits, vegetables, milk and eggs. However, the country continues to be deficient in oilseeds and pulses. Rainfed regions which account for 70 percent of available land have low productivity. Overall production per hectare of several crops is well below world standards.

(c) The industrial structure has been greatly diversified and a high degree of self-sufficiency achieved in industrial goods. By international standards, however, Indian industry is inadequately competitive and, despite conspicuous advances in such high-tech areas as atomic energy and space, the technological gap between India and the industrial world is widening.

(d) The physical infrastructure has grown manifold. Electricity generation in utilities rose from 5.1 billion Kwh in 1950-51 to 264.2 billion Kwh in 1990-91. Over the same period, production of crude oil and coal rose from 0.3 million tonnes and 32.3 million tonnes to 33 million tonnes and 223.5 million tonnes, respectively. There have been large expansions in rail, road and transportation capacities. Still, infrastructural bottlenecks have persisted. In particular, inadequate availability of electricity has been a constraint on economic growth.

(e) Social indicators show considerable advances which nonetheless remain substantially below those achieved by developed as well as several developing countries. Life expectancy at birth improved from 32 years in 1950-51 to 59 years in 1989-90. Thanks to improvements in health services and nu-

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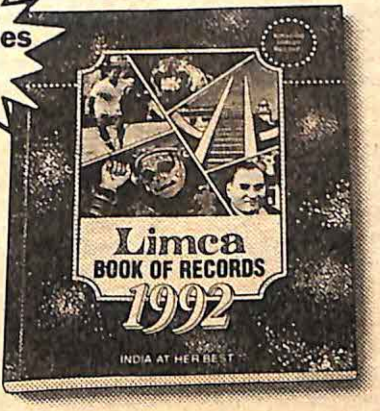

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trition, the death rate per 1000 declined from 27.4 in 1950-51 to 10.2 in 1989-90. By comparison, the decline in birth rate per 1000 was modest, from 39.9 to 30.5. As a result, population has continued to burgeon constraining per capita income and putting pressure on available goods and services and the environment. The literacy rate in 1990-91 in population above 7 years is placed at 52 percent. The progress has been slow and unsatisfactory.

(f) Gross demestic saving as percent of GDP rose sharply from 10.4 percent in 1950-51 to 21.2 percent in 1980-81 and has fluctuated around the latter figure since then. The corresponding gross domestic capital formation has been higher by 2-3 percent of GDP indicating that development has relied predominantly on domestic saving. However, high capital-output ratios have constrained growth.

(g) Though economic growth and anti-poverty programmes have reduced the incidence of poverty, about 250 million people are still below the poverty line, a massive number by any reckoning. The fiscal system has not been particularly effective in improving income distribution due to large scale tax evasion and massive subsidies, explicit and implicit, which have mostly benefited the relatively better off sections of society. Regional imbalances have persisted. Economic growth has not been strong enough to overcome social rigidities, which have retarded the spread of equity. Caste and communal divisions appear to have sharpened, due partly to the interplay of political forces.

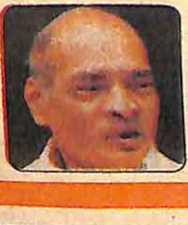
(h) The public sector has played a major role in building the infrastructure and basic industries which have also contributed to the growth of the private sector. While some of the public sector units (PSUs) have done very well, the overall return on capital invested in PSUs at Central and State levels has been dismally low even though several of them are virtual monopolies. Investments exceeding Rs. 100,000 crore in 245 central PSUs earn an overall return of about 3 percent, a fraction of the return on investment in the private corporate sector.

The financial performance of around 900 PSUs at the State level is far worse. There are a host of reasons for the generally low efficiency and profitability of numerous PSUs despite the presence of considerable managerial talent. These include multiple and sometimes conflicting objectives, inadequate managerial autonomy, political and bureaucratic interference, overmanning, administered price regimes, a lack of commercial culture, emoluments divorced from a unit's financial performance, soft budget constraints which enable loss makers to continue indefinitely, and work cultures induced by a system wanting in effective incentives and disincentives.

As already mentioned, the 1980s witnessed an acceleration of the economy's average growth rate to 5.4 percent, with average annual inflation of around 8 percent. The economy advanced on a wide front with the primary, secondary and the tertiary sectors registering fairly healthy growth by historical standards. Increased investments, some improvement in the functioning of the infrastructure, a measure of liberalisation in the regulatory regime, easier inflow of technology and required imports, phenomenal growth of the capital market and a fast diversifying financial system helped raise the level of productivity. However, the mode of financing the Sixth and Seventh Plans built up massive fiscal and BOP deficits which have assumed unsustainable proportions.

The crucial imbalance is in the fiscal area. The fiscal deficit (total expenditure minus revenue receipts) of the Central Government in 1990-91 was equivalent to 8.5 percent of GDP and that of the Centre and the States together around 11 percent. This implies a heavy draft on the financial savings of the household sector (70-75 percent), rising external debt, higher interest rates and growing debt service burdens. The outgo on interest account of the Central Government is now way above defence expenditure. The Centre's deficit on revenue account rose to over 3 percent of GDP requiring acquisition of debt for current expenditure and reducing greatly the scope for investment.

The budgetary deficit which is financed by the



The country has taken the plunge and there is no going back
– Narasimha Rao

Reserve Bank of India (RBI) stood at over 2 percent of GDP. The high powered money thus created year after year has led to excessive liquidity and increased inflationary pressures. Despite successive satisfactory harvests, the rate of inflation, as measured by the wholesale price index, rose to 12 percent in 1990-91 and later peaked at over 15 percent in August 1991 before the seasonal decline set in. To subdue excessive demand, interest rates have had to be sharply jacked up. In short, the country has been living beyond its means for several years but cannot continue doing so as the party is about over. Thus, despite massive borrowing, government faces a resource crunch and is unable to provide adequate resources even for the core infrastructural sectors. For quite some time profitable PSUs have been pushed to raise funds in the capital market. There are also plans for selling part of the equity of selected PSUs to mutual funds, PSU employees and the public.

The fiscal weakness is essentially a reflection of inefficiency on both revenue and expenditure accounts. Expenditures have generally exceeded the growth of revenue. In the second half of the last decade, current expenditures grew at the rate of 17 percent per annum with revenue growing at the rate of 15 percent. Despite an expanding and more affluent middle class, the base of income tax remains narrow. A plethora of exemptions and non-taxation of agricultural incomes depress tax receipts. The growing size of the parallel economy is, inter alia, a reflection of inadequate tax enforcement. Steep customs tariffs raise domestic costs and provide excess protection to domestic industries, reducing the incentive for improving their efficiency and competitiveness. There is an urgent need for undertaking comprehensive reform of the tax system.

Current expenditures have been rising rapidly, particularly on interest payments, defence and subsidies. According to a study carried out by the National Institute of Public Finance and Policy, costing government services on a user charge basis, the volume of government explicit and implicit subsidies at the Centre and in 14 major States in 1987-88, was estimated at Rs. 42,324 crores or almost 15 percent of the GDP. The study found that not only is the total volume of subsidies very large but also that it is inequitably distributed, and therefore requires better targetting to socially disadvantaged groups and overall reduction. As already mentioned, the return on investment in PSUs is very low. Over 35 per cent of government subsidies have been flowing into these enterprises.

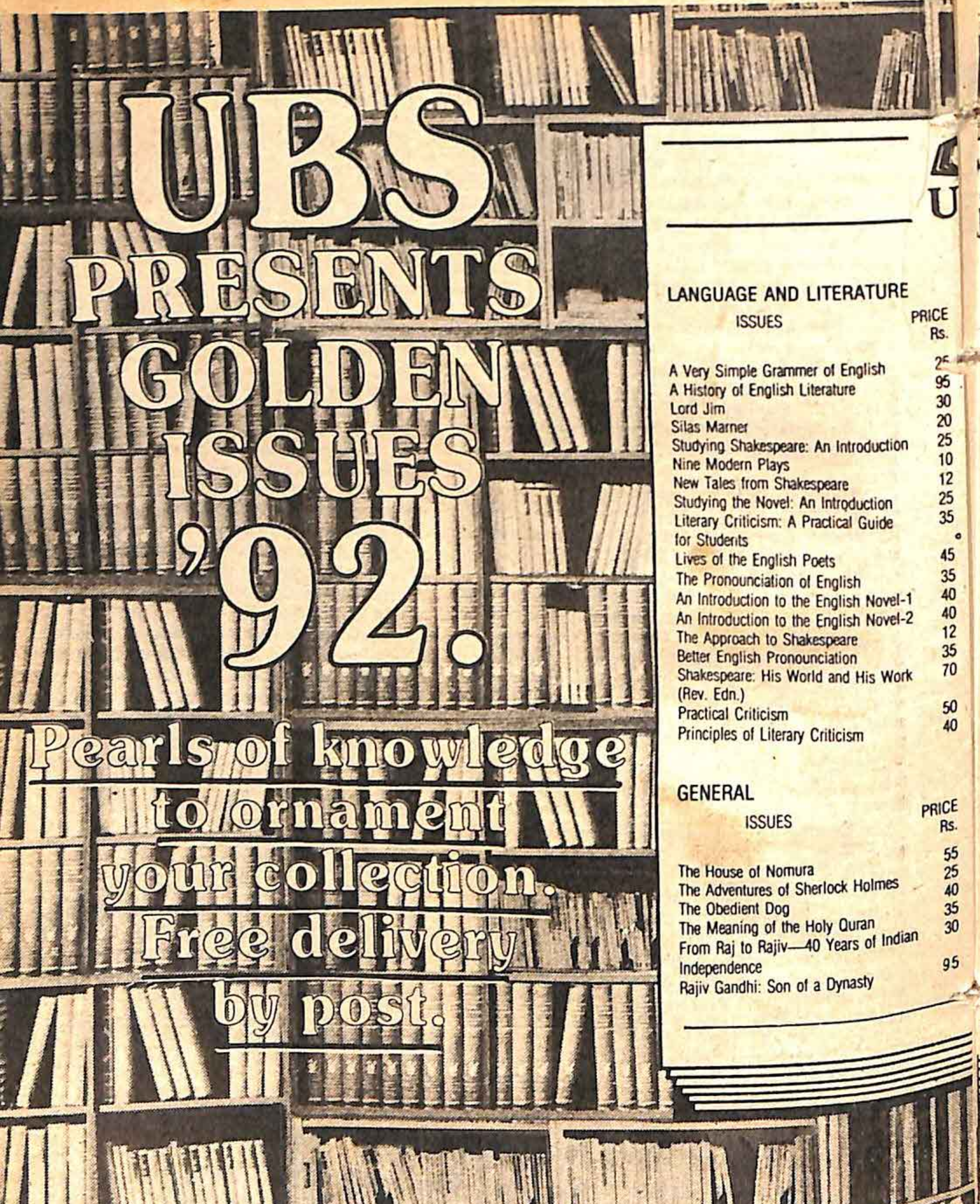
A major issue is whether an economy where a predominant portion of the financial savings of the household sector is borrowed by the government to cover a growing deficit on revenue account and to invest in the public sector which yields low returns, can achieve its growth potential.

Large and persistent budgetary imblances often result in current account deficits in the BOP, rising external borrowing and growing debt service. This is not only because budgets contain provisions involving foreign exchange expenditure but also because high demand emanating from deficit budgets tends to increase imports even in economies with restrictive trade regimes. Besides, an inflationary environment can inhibit exports especially if the relevant national currency tends to become overvalued. Budgetary imbalances have, among other things, contributed to severe pressures on the BOP.

The annual average trade deficit from 1980 to 1989 was around 3.4 percent of GDP. However, net invisible receipts over that period declined from 2.1 percent of GDP to 0.9 percent of GDP. The current account deficit of the BOP which averaged 1.3 percent of GDP in the Sixth Plan period rose to an average of 2.2 percent of GDP over the Seventh Plan period. As a result, external debt rose substantially and the debt-export ratio increased from 131 percent to 223 percent between 1980 and 1989. Debt service as percentage of export of goods and services, went up to 23 in 1988-89 without taking into account interest on NRI deposits.

The composition of debt also changed due to

> **There have been too many free lunches. We will have to cut them down – Manmohan Singh**



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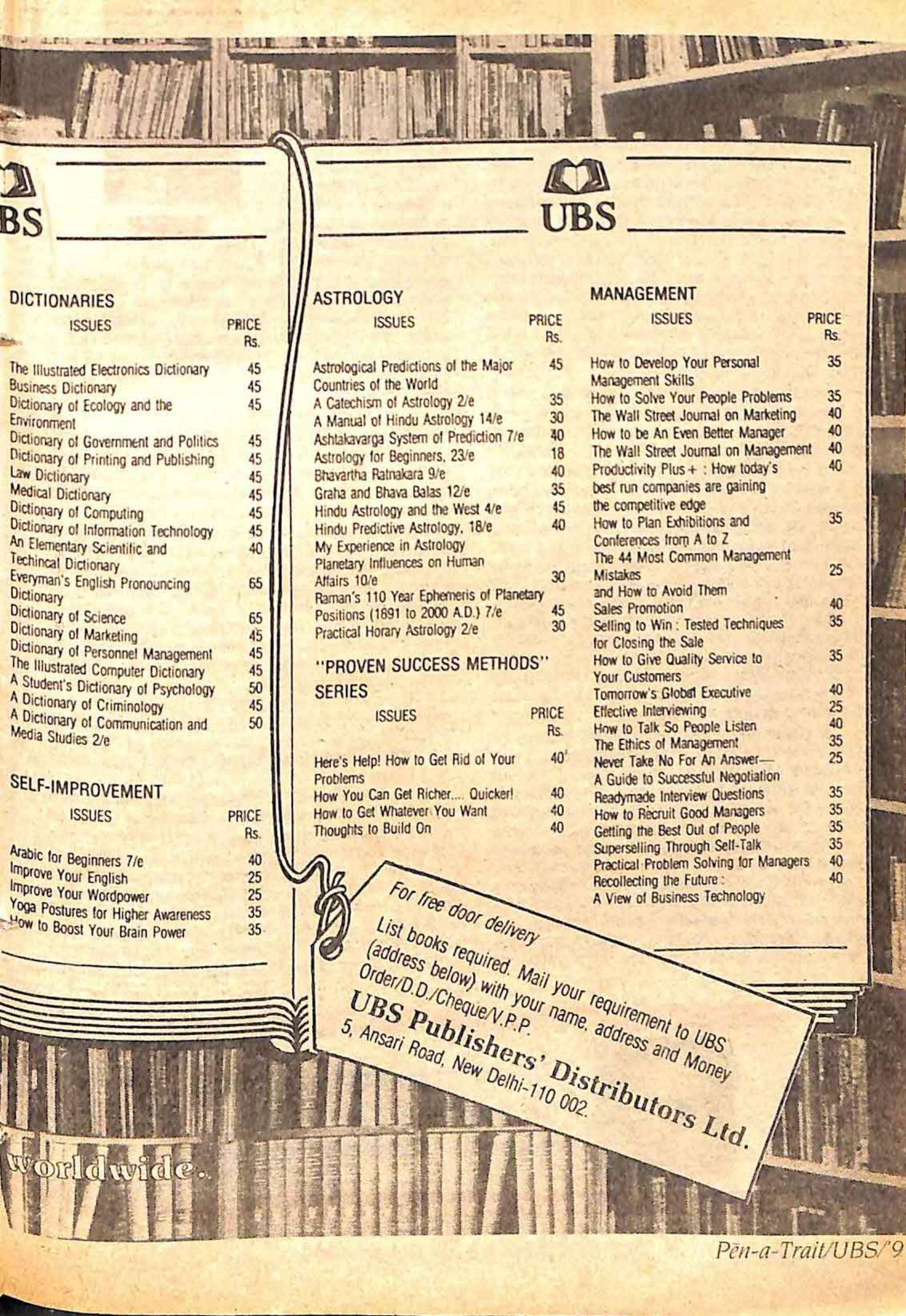

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hardening of terms of assistance (e.g. lower IDA assistance and higher borrowing from the World Bank on market related interest rates), larger recourse to borrowing from commercial banks and growing dependence on high cost NRI deposits. The increase in debt service and continuing pressure on foreign exchange reserves despite fairly heavy borrowing had diminished the economy's capacity to absorb a major shock such as the one administered by the Gulf crisis of 1990-1991. The consequence was a lowering of the country's credit standing despite an unblemished debt service record, difficulties in rolling over short-term debt, and some erosion of NRI deposits. All this led to a BOP crisis which havs been averted only by seeking extraordinary support from the Fund.

There was a clear and urgent need for a strong adjustment effort to bring back the country's finances to health, subdue inflation, and restore viability of the BOP. A broad consensus has emerged in favour of reducing fiscal deficits, in particular the deficit on revenue account. This requires strong measures to cut non-productive expenditure and increase tax and non-tax revenues. While fiscal consolidation would for some time constrain growth, this is a necessary price for creating conditions for sustainable development. It cannot be a part of Fund conditionality that investment in the infrastructure, agriculture or rural development should be reduced. The constraints could flow from a genuine shortage of budgetary resources and not from sector specific conditionality. Every effort should be made to protect investment in these sectors and to avoid an adverse impact on the poor.

The broad argument that imperfect markets in poor economies do not by themselves ensure optimal allocation of resources is well taken. However, there is no evidence that government intervention in favour of the poor is to be given up or even reduced. Indeed, greater stress on social services and provision of basic needs should favour the disadvantaged. As for subsidies, a reference to their large scale and inequitable distribution has already been made. The need for reducing them substantially and concentrating their benefits on the poor is quite obvious. Regarding the future role of the public sector, the real issue is its low profitability and whether, in the light of experience, soft budget constraints and subsidisation of PSUs should continue.

Past attempts at improving its financial performance have not been conspicuously successful mainly because the factors which erode its productivity, enumerated earlier, have not been effectively addressed. Recent decision to allow the private sector to operate in many areas previously reserved for the public sector, sell part of the equity of selected PSUs and to refer cases of chronic loss makers to the Board for Industrial and Financial Restructuring may be seen in this light. While privatisation is not a panacea, it need not be ruled out in appropriate cases. Though several infrastructural fields have been opened to the private sector, the crucial role of the public sector in providing infrastructural services will have to continue.

The sensible way to improve the BOP is to increase exports sufficiently so that they can pay for the imports needed by a growing economy. This requires, inter alia, increasing the profitability of exports vis-a-vis domestic sales. Devaluation, if otherwise justified, can help raise exports and prevent capital flight. Devaluation has inflationary effects but that alone would not warrant maintaining an over-valued currency.

Before discussing the rationale and specifics of the important changes made in industrial, foreign investment, and trade policies, the following developments which have a bearing on this discussion may be noted:

(a) There has been a dramatic move away from the paradigms of rigid central planning in East and Central Europe where erstwhile communist regimes have been replaced by pluralistic politics which are increasingly adopting market oriented policies despite serious transitional difficulties. These countries, including Soviet Russia, are keen on foreign investment and technology, wish to establish market institutions and would in due course push for grwoing integration with the European Community.

No one would be allowed to import if he did not export – Chidambaram

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(b) Driven by technological developments and deregulation, industrial country markets in goods, services and capital are progressively integrating across national frontiers. Several developing countries find it beneficial to participate actively in the affairs of the fast developing 'global village'. There is no reason why India should deny itself these opportunities.

(c) Over the years, the Indian economy has grown in size, diversity and complexity. The private sector is now capable of handling large projects and mobilising the requisite resources, thanks to the phenomenal growth of the capital market and rapid diversification of the financial system. With greater exposure to domestic and foreign competition it can improve its export orientation and gradually carve a place for itself in the international arena. A growing middle class with considerable entrepreneurial talents and spirit wants more elbow space, untrammelled by unnecessary, time-consuming regulations. Official policies must respond to these dynamic urges.

Adverting to industrial policy, a rigid licensing system where government decided who would produce what, how much, at what place, often at what price and with what technology, had for long delayed investments, raised costs, disregarded economies of scale and caused numerous other distortions. It entailed massive waste of national effort, encouraged rentiers and, through case by case approvals, enhanced the scope for political and bureaucratic patronage.

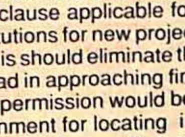
The emphasis on import substitution enhanced the economy's self-reliance but also led to high protection of domestic industries through quantitative import controls and steep tariffs. This reduced the incentive to improve efficiency, competitiveness, and exports. Also, costs rose throughout the economy. To promote investment despite high costs of domestically produced capital goods, capital was subsidised, which promoted a preference for capital intensive techniques in a labour surplus economy. Debarring the private sector from entering numerous areas created virtual monopolies in the public sector with adverse effects on its efficiency. The Monopolies and Trade Restrictive Practices Act placed restrictions on the growth of 'large' industrial firms whose size was rather modest by international standards. These caused costly delays in investment and depressed industrial dynamism. The inflow of foreign direct investment also remained small.

Among other things, a measure of liberalisation injected in the licensing regime during the 1980s showed good results. Industrial production in the second half of the decade grew at a healthy rate of 8 percent plus, double the rate registered in the 1970s. Considering the persisting weaknesses in the economy and the evolution of the fiscal and BOP situation, it is evident that future growth would depend crucially on increased efficiency and productivity of the system, particularly in the industrial sector. The new industrial policy seeks to address the long-standing weaknesses in the regulatory regime in order to promote efficiency, competition, technological upgradation and investment.

Licensing has been abolished for all industries except 18 specified industries. This would ease entry into industrial production, enhance domestic competition and direct investment to projects justified by market demand and supply. The mandatory convertibility clause applicable for term loans from financial institutions for new projects has been done away with. This should eliminate the inhibition which many firms had in approaching financial institutions for loans. No permission would be needed from the Union Government for locating industries in areas other than cities with more than one million population, thus reducing the scope for distortions associated with forced location of industrial units under administrative fiat.

However, a policy of incentives for backward areas and infrastructural development will be pursued. The exclusive role of the public sector is to be confined to 8 select areas like atomic energy, some defence production areas, etc. Industries like iron and steel, power generation and distribution, air transport and ship building will be opened to the private sector also. This would reduce monopolies in

More people would have to be brought under the tax net – Pranab



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the public sector, expose it to competition and, over the medium term, reduce its draft on the budget.

Twenty percent of Government equity in selected undertakings will be offered to mutual funds, investment institutions, workers and the public. This should enhance profit orientation of the PSUs concerned as well as their accountability to new shareholders who might increase pressure on managements for better performance.

Significantly, a National Renewal Fund is to be created for providing a safety net to protect workers against the adverse consequences of technological transformation.

The threshold limit of assets of MRTP companies and dominant companies has also been removed making it easier for them to grow more dynamically.

A major change has been made in the policy on foreign direct investment. Foreign equity holding limit has been raised to 51 percent. A Board will consider major foreign investment proposals to expedite required approvals and provide even more liberal concession where warranted. Automatic clearance for import of capital goods is to be accorded when foreign exchange availability is ensured through foreign equity. Provision has also been made for automatic permission for foreign technology agreements subject to specified conditions. A clear signal has been given that foreign investment and technology are welcome.

This comprehensive set of measures moves decisively towards a liberal, market oriented policy with a view to raising investment, productivity and competitiveness of industry. The policy needs further strengthening through a clear enunciation of an exit policy for sick industries in private and public sectors and a categorical statement for reducing customs tariffs to reasonable levels over a period of four to five years during which the BOP position should improve and industries may prepare themselves to face external competition. Also, it is essential to reduce rigidities in the labour field with a view to imparting greater flexibility to the industrial structure. It is important that the policy be implemented efficiently at all levels in the right spirit.

Removal of infrastructural deficiencies would help a positive response from industrial investors. In the short term, restrictive monetary and credit policies may be an obstacle though the primary capital market conditions should help resource raising.

Major changes have also been made in the trade policy. The cash compensatory scheme has been abolished thus providing substantial relief to the budget. With a few exceptions, a uniform replenishment rate of 30 percent of FOB value for exports has been allowed. Except for bulk commodities and a few other categories of goods, importers will buy their requirements against Rep licences (called exim scrips) freely traded in the market. Financial institutions have also been allowed to trade in these instruments. The policy reduces discretionary licensing of imports, provides substantial incentive to exporters through market premia on exim scrips in addition to a supportive exchange rate and prices most non-bulk imports through a market mechanism. Authorities expect to make the rupee convertible on trade account in the next few years.

In recent years, considerable liberalisation and diversification have taken place in the financial sector. As a result, the money market has grown and become active. The interface of the banking sector with the capital market has improved with the establishment of several mutual funds, merchant banks and venture capital outfits. Several leasing and hire-purchase companies, housing finance institutions and factoring services have come up. Introduction of new and innovative financial instruments has lent sophistication to the market. Financial and money markets offer increased choices to savers, investors and borrowers.

The interest rate regime is being relaxed. The Securities and Exchange Board of India has been set up to protect the interests of investors and regulate the capital market. Two rating agencies are functioning. Links between the Indian and foreign financial markets have also strengthened but need further promotion. At the same time, there are several weak spots which merit attention. In particular, the financial strength of commercial banks and financial institutions needs reinforcement. Financial monoplies in the public sector should be exposed to effective competition from the private sector.

As indicated above, the tax system needs a comprehensive review and reform to improve its effectivness and equity, and to contain the growth of the parallel economy.

Restructuring and reorienting economic policies on a comprehensive scale is a difficult task as the process disturbs entrenched interests who benefit from the status quo. The transition has to be handled with imagination and perserverence. Broad political support is essential. Effective control of inflation and a firm assurance that preoccupation with industrial, trade and financial policies will not involve neglect of agriculture and rural development or dilute the commitment to poverty reduction will be crucial to the development of such support.

By: **R.N. Malhotra,** Former Governor,
Reserve Bank of India

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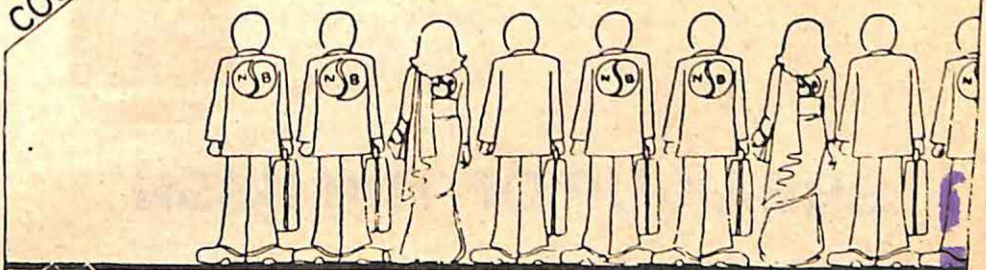

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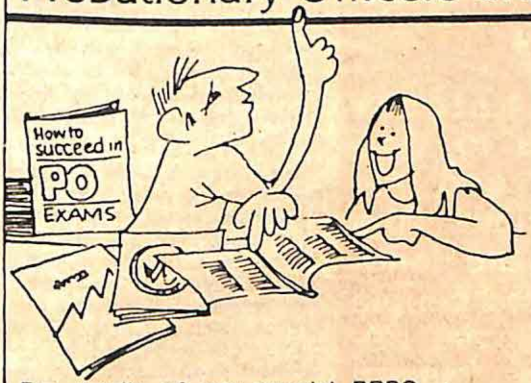
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BREAK-UP OF THE USSR

After a period of cataclysmic changes, the Soviet Union veered round to a political and economic metamorphosis before the curtain was rung down on 1991. The year saw an abortive attempt in August to remove Mikhil Gorbachev, the architect of glasnost and perestroika, from the scene by the hardliners of the communist echelon, but they were swept away to the dust heap of history by the sheer moral will of the people. But ultimately Gorbachev himself was caught in the undercurrent of his own reforms that eventually saw the Soviet Republics freeing themselves of the monolithic hold to join the comity of free nations.

> **Whatever happens to Gorbachev and his companions, the fate of the long-oppressed people of the Soviet Union and Eastern Europe will not be the same again. Oppressors will be swept to the dust-heap of history.**

It was after three quarters of a century of pursuing egalitarianism through Marxian methods that the USSR took preliminary steps towards political democracy and economic salvation through the adoption of the market economy mechanism.

Are the Soviet citizens choosing the right solutions for their erstwhile ills? Are they right or justified in their new-found love for capitalist ethics and true-style democracy?

Yes, indeed, is the answer. The reasons:

1. The people of the USSR have tasted the bitter fruit. They tried their hand at building communism – as a superior system to the capitalist system – and dismally failed, by universal admission. In fact, observers of the world scene have witnessed during the past decade the crumbling of several communist regimes all over the world like a pack of cards. It is only the truth that during the 20th century large parts of the world have given the collective alternative a long, thorough and staggeringly costly trial and it seems to have failed practically everywhere. The people of the Soviet Union simply had no alternative but to drop communism like a hot potato and seek their salvation through other methods.

2. The Soviet people have seen the enormous strides made by the people of Western Europe by accepting the concepts and principles of the market economy. After a near-total devastation brought about by the Second World War, the West European countries literally "rose again from the dead". They used the twin engines of political democracy and capitalist enterprise to create enormous quantities of wealth for their citizens to enoy and flourish day by day.

This happened even while the millions on the wrong side of the "iron curtain" languished in stunted economic growth and mediocre living standards. During the Seventies and the Eighties most of the socialist economies of East Europe ceased functioning as going concerns. Inefficient economic arrangements and political straight-jacketing brought these countries to the brinks of bankruptcy. Despondency and lethargy ruled the roost, everywhere in Eastern Europe. People lost confidence in themselves and more significantly, they lost confidence in the politico-social system under which they lived. It was time for "implosions" to take place in country after country – Poland, Czekoslovakia, Hungary, Rumania, Bulgaria and even tiny (but recalcitrant) Albania – allowing the communist structures in these countries to be removed and western style free enterprise concepts and arrangements to be inducted in, all on the crest of popular will and support. We all know that re-structuring is a costly, time-consuming process and the fruits of re-structuring will emerge only gradually. Citizens of Eastern Europe are holding their breath and anxiously waiting for the dawn of a good day in their lives.

In the case of the Soviet Union the implosion occurred a little late in the line, partly because the USSR was still wearing the mantle of the "Other Super-power" of the world and partly because the country was too huge for any sudden re-orientation. But the economic malaise that afflicted the USSR has not been of any lesser intensity or virulence than in the rest of East Europe.

The well-intentioned Gorbachev himself would not have foreseen the widespread iconoclasm – breaking of once-revered statues of Lenin and Stalin – that occurred as a sequel to his political and economic liberalization programmes. Glasnost and perestroika have given the suppressed and oppressed people of the Soviet Union their once-in-a-lifetime chance to undo the harm done by Communist party bureaucrats and ideology -drunk political leaders. They simply wanted nothing less than the abolition of the Communist party itself. The result: the CPSU was unceremoniously wound up under the signature and authority of its General Secretary, comrade Mikhail Gorbachev himself.

3. Free enterprise or capitalist system has proved its efficiency and invincibility historically all over the world in the past two centuries or so. Off and on several competing systems have come up to nudge the capitalist system and if possible to replace it; till todate, however, no system has been found to be as productive and as indestructible as the free enterprise concept and practice. This is because capitalism (or free enterprise) is a natural force (rather than a contrived ideology like communism) springing from instincts deep in our human natures.

Remember the "invisible hand" of Adam Smith. And capitalism has shown admirable flexibility in changing and adapting to new conditions and situations. The capitalism which we see now in Western Europe or America is not the old genus at all; rather it is a much-modified, much-adapted and more often than not, much-humanised economic system. The history of capitalism in the past few centuries has shown us that it is a system which is modifying itself all the time, to conform to, to be in consonance with, emerging social needs and situations, applicable to different societies, in different parts of the world.This tenacity of the capitalist system can be traced to the free enterprise spirit ingrained in human beings–which attribute according to Adam Smith was nothing less than a divine gift, given by God to man.

Humanising Capitalism: Humanists and thinkers know, however, that capitalism has not been, will not be, an all-smiles affair, under actual conditions anywhere. The drawback of capitalism lies in its moral neutrality – its indifference to the notion of moral choices.

Capitalism and the market system that gives it its power is single-minded in its thrust – that is why it is so productive. It is blind to all other factors: blind to class, race and colour; to religion and sex; to nationality and creed; to good and evil. It is materialist, impersonal and non-human. It responds with great speed and accuracy to all the market factors.

It is precisely because capitalism is morally indifferent and so productive of great miseries as well as great blessings that many idealists, early in the 19th century, saw it as evil, rejected it entirely and sought to replace it.

The most recent attempt at replacing it with an alternative system, namely, communism has come to grief ignominiously–as is currently being witnessed by events in the Soviet Union, East Europe and

The Wheel Turns full Circle

The concept of communism saw all capitalists as exploiters. Decades ago, when communism was rolling forward in influence and style in Europe, the communists' street-song was: "the expropriators will be expropriated". Now the wheel has come full circle! Communists who expropriated the capitalists once upon a time with glee and self-justification are themselves at the receiving end of the stick!

As Milton said,
"That two-handed engine
Will smite once
And smite no more!"

The Pinoches, the Ceausescus, the Seku Toures, the Bokasas, the Nemerys, the Idi Amins, the Mengistus, the Siad Barres,the Kaundas – all belonged to this category of benign (and sometimes not-so-benign) dictators who ultimately have been swept on "to the dust-heap of history" by the sheer moral power of their own oppressed people.

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Slavic nations form

Leaders of Russia, the Ukraine and Byelorussia signed an agreement to form a commonwealth of independent States on 9th December 1991 and made Mikhail Gorbachev's presidency redundant by announcing that the USSR has ceased to exist as a subject of international law and a geopolitical reality.

Soviet President Gorbachev was pressing ahead with his increasingly desperate campaign to preserve the Soviet Union until the last minute before the announcement of a slavic commonwealth. In a television interview Soviet President Gorbachev told Ukrainians who voted for independence that the Soviet Union could not be shattered by the stroke of a pen.

The hour-long interview taped on Dec. 8th, was broadcast on Ukrainian Television on 9th when Russia, Byelorussia and Ukraine announced they were forming a slavic commonwealth and declared Mr. Gorbachev's Government dead.

"The union still exists", he maintained. "Your brothers might say it doesn't, or they might talk about the former union. No. It's not a structure, not writing or speech. It's reality. It's people. It's life. It's society", he said.

He did not comment immediately on the announcement of a commonwealth.

Presidents Boris Yeltsin of Russia and Leonid Kravchuk of the Ukraine, and chairman of Byelorussia legislature Stanislav Shushkevich announced that from the moment of signing the agreement "the application of the norms of third countries including the former Soviet Union is forbidden on the territory of the signatory States and the activity of the bodies of the former union stops."

The three leaders said the agreement was open to all former Soviet republics as well as other states sharing the aims and principles of the commonwealth to join.

They announced that the coordinating bodies of the independent commonwealth would have their official seats in the city of Minsk, the capital of Byelorussia.

The historic agreement was signed on Sunday by Mr. Yeltsin, Mr. Kravchuk and Mr. Shushkevich in Wiskuli in Byelorussia's Brest region bordering Poland after two days of closed-door talks.

The Slavonic Republics also signed an agreement to pool economic efforts and coordinate their economic policies.

Mr. Gorbachev was kept out of the meeting of the three Slavonic States which have most of the economic power and three-quarters of the population of the disbanded Soviet Union.

Mr. Yeltsin, Mr. Kravhcuk and Mr. Shushkevich said they guarantee the single control over nuclear weapons and fulfilment of international obligations ensuing from treaties and agreements signed by the former Soviet Union.

The three leaders said they had decided to preserve the joint command over the common military-strategic space and the single nuclear arms controlling body.

They said member-states of the commonwealth would have joint activity in spheres of foreign policy, development of common economic space, the European market, the customs and migration policy, development of transportation and communication systems, protection of environment and ecological security, and the struggle against organised crime.

The leaders said they recognise and respect territorial integrity of the parties to the agreement and inviolability of existing borders, their openness and freedom of travel.

The formation of a commonwealth by the three Slavic Republic of the Soviet Union is likely to force a review of Soviet debt relief plans prepared by the Group of Seven industrial nations, Japanese Government officials said in Tokyo.

The G-7 nations–the United States, Britain, France, Germany, Italy, Canada and Japan–agreed with the Soviet Central Government and major Soviet Republics last month on the debt relief package.

Even if the Soviet Union is dissolved, the officials said, the aid package will not be affected because individual republics have already agreed on it.

a 'commonwealth'

USSR, the largest country in the world in point of area (22,4000 Sq km; Population: 287,019,000) stretches across the continents of Asia and Europe. The country extends for over 9600 km from the Baltic Sea to the Pacific Ocean and for 4800 km from north to south.

The 15 Republics

Republic	Area sq. km.	Population	Capital
Russia	17075000	142.1	Moscow
Ukraine	603700	50.7	Kiev
Kazakhstan	2717300	15.6	Alma-Ata
Uzbekistan	447400	17.5	Tashkent
Byelorussia	207600	9.9	Minsk
Azerbaijan	86600	6.5	Baku
Georgia	69700	5.2	Tibilisi
Moldavia	33700	4.1	Kishinev
Lithuania	65200	3.5	Vilnius
Kirghizia	198500	3.9	Frunze
Tadzhikistan	143100	4.4	Dushanbe
Armenia	29800	3.3	Yerevan
Latvia	63700	2.6	Riga
Turkmania	488100	3.1	Ashkhabad
Estonia	45100	1.5	Tallin

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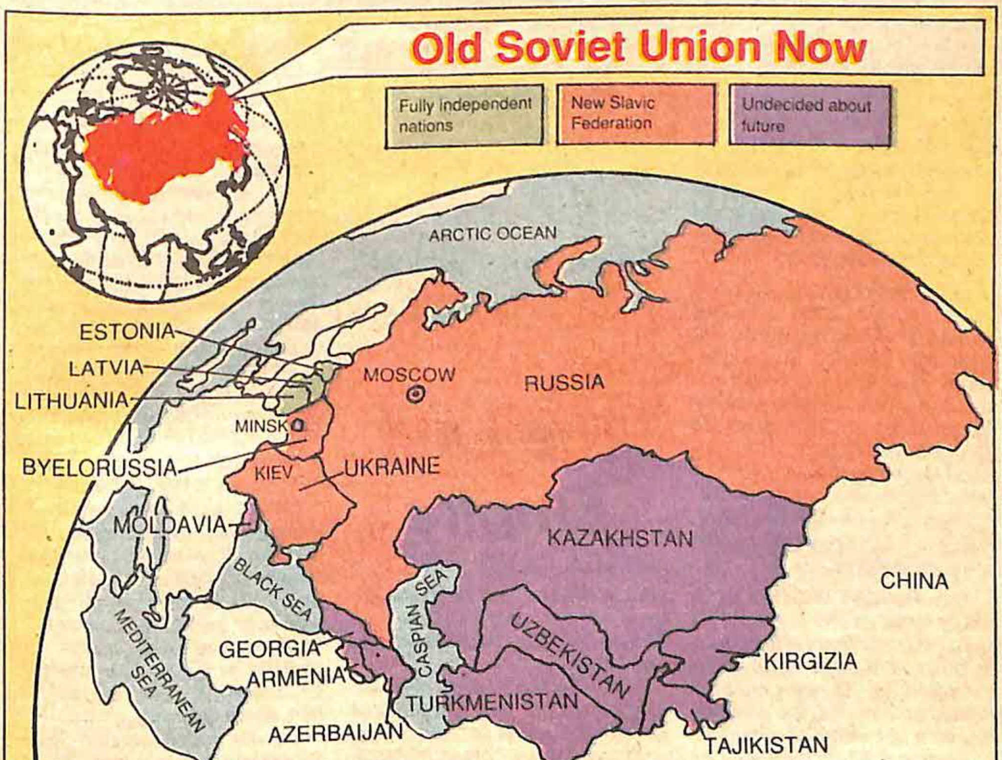

elsewhere. With this self-abdication by communism, the world is left with practically no effective substitute for capitalism or free enterprise.

Fortunately, experience in western countries and elsewhere has shown that capitalism can, in fact, be made humane and acceptable by buttressing it with the principles and practice of political democracy. Democratic means and methods can be employed to give a legal framework with moral basis – within which economic activity can be efficiently pursued, for the maximum good of the maximum number.

Democratic control and guidance of economic activity under free enterprise can provide a moral basis and tone to the whole process of economic production and distribution – the desired end-result being some sort of a "welfare state" for different societies or peoples, with variations and modifications to suit individual needs. All this arrangement will work with virtually no diminution in the freedom of the individual which is the hallmark of a free and enduring society.

Democracy-supporting concepts like equality before law, availability of fairness and justice to groups and individuals, equality of opportunity, giving to deserving poor high-quality education of every kind at every stage, giving of shares to workers in all public enterprises, spreading of ownership of public corporations (through share holding) widely among the general public, active promotion of small businesses on the widest possible scale (remembering the motto: small is beautiful) along with the provision of infrastructural and other aids which will ensure a climate of fairness in which these small businesses can operate, the active promotion of free trade both nationally and internationally – are all there to make the free enterprise cake larger, richer and sweeter.

This, in other words, works out to the promotion of capitalism within the context of a welfare state – of the Sweden-Denmark-Holland model. Those who have visited these countries and have seen the degree of human welfare and affluence existing there (and mind you, all these achievements have been realised through democratic action only) will not crave for anything more (or less). All these would or should offer a moral of hope and cheer to the much-deprived millions on the other side of the "iron curtain".

What goes on in the minds of Soviet and East European citizens with regard to these conceptual

The Last Empire

Soviet Union was never a nation-state in the sense we understand it in political science. It was the historical result of Czarist empire-building and the accretions made by Stalin during and after World War II.

Many Soviet republics include large ethnic minorities. The sprawling Russian republic, for example, includes 16 autonomous republics and 5 autonomous regions inhabited mainly by non-Slav peoples such as Mongols and Tatars. The situation regarding the rest of the 14 republics is also not dissimilar. No republic can claim an ethnically homogenous population within its borders.

The Russian diaspora is a major factor in this context. The Russian component of the population in other sister republics is as high as 38 per cent in Kazakhstan putting the community on a par with Kazakhs. The proportion is 30 per cent or more in Latvia and Estonia, 20 per cent in Ukraine and Kirghisia and over 10 per cent in Tajikistan, Uzbekistan, Georgia, Byelorussia and Moldavia.

In this veritable mess of ethnic divisionism, it was remarkable indeed, that some sort of national unity was forged – obviously artificially and very often using brute force – by the Soviet authorities in the past. What made the union a monolithic and highly centralised entity nevertheless was the monopoly of power enjoyed by the Communist Party functioning on the basis of its doctrine of democratic centralism. Once the Party's monopoly was formally abolished its role in holding the republics tightly together came to an end. The post-coup suspension of the Party and the dissolution of its Central Committee marked the final collapse of what was left of the original principle of "unity in diversity".

Half a century ago when Great Britain was a colonial power Sir Winston Churchill remarked that he was appointed Prime Minister by His Majesty not to "preside over the dissolution of the British empire". A similar remark may be expected from Mikhail Gorbachev if someone asked him about the widespread demand for independence from scores of ethnic minorities in the Soviet Union today.

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problems currently facing them is anybody's guess. But if they are practical and wise they should henceforward concentrate on maximum national production of wealth under conditions of individual freedom and its fair distribution on democratic lines.

The rise and fall of C.P.S.U.: The forerunner of the CPSU was the Bolshevik party of Lenin which seized power in 1918 and soon banned, in true Marxian style, all other political parties from the land.

With the death of Lenin in 1924 there was confusion and infighting in the Bolshevik party for its leadership. The main contenders were Joseph Stalin and Leon Trotsky. Stalin ultimately was able to defeat Trotsky and assume absolute power in the party as well as in the government from that time onward.

In 1929 Stalin ended the New Economic Policy (NEP) of Lenin initiated in 1921 which was a strategic policy initiative adopted by Lenin to mollify widespread opposition to wholesale nationalisation and state control of all economic activities. The NEP represented the last vestiges of humanism and tolerance in the USSR for over sixty years. (These attributes resurfaced only with the advent of the Gorbachev era.).

From 1929 to 1953 Stalin ruled the USSR with unparalleled autocratic power. The CPSU itself was officially instituted in 1952 – a year before his death in March 1953.

From 1953 to 1964 Nikita Khruschev became the First Secretary of the CPSU. It was he who allowed a little bit of democratic breeze to come into the CPSU and the USSR economic structure and arrangements. But his liberalisation measures were at best spasmodic in style and peripheral in effect.

In 1964 Nikita Khruschev was ousted and replaced by Comrade Brezhnev who was a hard liner in his thinking and operation. He led the CPSU and the Soviet Union for 18 long years which period witnessed an intensification of the cold war. When Brezhnev died in 1982 discontent within the CPSU and government was rife. People wanted a change but couldn't express their wish openly.

Yuri Andropov took over as the First Secretary in 1982 followed by Konstantin Chernenko in1984. Both these leaders were mere seatwarmers only.

With the death of Chernenko in 1985, Mikhail Gorbachev assumed the problematic (or was it ill-fated?) chair of the CPSU. Gorbachev was a totally different communist leader – in mental make-up and stvle of operation. Though elected the First Secretary of the CPSU by an overwhelming majority by the Party Congress and later appointed the first-ever Executive President of the Soviet Union, it fell to his lot to formally disband and bury the CPSU for all time to come. The credit undoubtedly goes to the man's basic honesty and sense of history.

The initiator of "glas-nost" and "perestroi-ka", Gorbachev stands out in Soviet history as a big man indeed. Recipient of the Nobel Peace Prize for 1990, Mikhail Gorbachev rose steadily, through $5^1/_2$ brief years of diplomacy, Gorbachev style, to the status of a world class leader.

– By K. John Oommen,
who worked as an economist in India and abroad.

A point of no return....

For a man who was instrumental in bringing epochal changes in the world balance of power and on whom the world gratefully bestowed the Nobel Peace Prize, the year 1991 ended with a sad note.

In July 1990 Gorbachev addressed an extraordinary CPSU Congress consisting of 4700 delegates and gave his audience a school teacher style dressing down. He staunchily defended his twin policies of "glasnost" and "perestroika in his emotion-filled speech. These policies, he claimed, "brought freedom to soviet society for the first time in seventy years and unchained its intellectual potential".

Gorbachev warned his conservative opponents that there was no possibility of "going back to old times".

Soviet society, he said vehemently, has come to a point of no return. "From here there was only one way open: that was to move forward along the line of reform and change."

Turning to the critics of his foreign policy, he bluntly told them: "One has to be blind not to see that the Soviet moves to cut down arms, let Eastern Europe choose its own road, and withdraw tropps from Afghanistan, are the right and moral decisions! What are the alternatives, he angrily asked the delegates. "Tanks again?"

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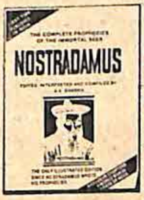

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WORLD'S MAN FRIDAY

World's top most civil servant, Ghali has taken over the reins of the United Nations at a crucial stage in its history when it is being asked to play an increasingly important role world wide especially in peace keeping operation and supervising elections.

Boutros Ghali, the 69-year old Egyptian Deputy Prime Minister took over the reins of the United Nations on January 1, 1992 for a 5-year term. He succeeded Peru's Javier Peres de Cueilar who retired after a distinguished career of 10-years.

It was the Security Council that recommended Ghali to the post on November 22, last. The council had held many a meeting during the previous six weeks and it was unanimously approved by the General Assembly.

The Security Council's voting is kept a secret (agencies quoting diplomatic sources said Mr. Gali got 11 votes with four abstentions) but it was clear that he had the support of all the non-permanent members of the Council, including India. France backed Mr. Ghali all along while the remaining four permanent members– the United States, Britain, USSR and China–also gave their approval to the selection by not casting negative votes.

Israel, which traditionally opposes any high U.N. positions for Arab States, was also supportive of Mr. Ghali who was an active participant in the Camp David talks that led to the peace treaty between Israel and Egypt. Mr. Ghali rallied to the support of the then Egyptian President, Anwar el Sadat, after the Foreign Minister resigned in protest against a deal with Israel.

Also of some relevance to Israel's tacit support for Mr. Ghali is that he is a Coptic Christian and known for his liberal views. His wife is Jewish.

The U.S., in the initial stages, was not enthusiastic about Mr. Ghali's candidacy or, for that matter, any African. Its preference was for Mr. Brian Mulroney, Prime Minister of Canada, but when he stepped down from the contest and found that both the nonaligned and the African groups were in favour of a candidate hailing from the African continent, it went along with the choice. One of the objections raised by the U.S., as heard in the lobbies, was that Mr. Ghali was too old for the job and that it would like a younger candidate to be named for the at-times nerve-racking job.

Mr. Ghali is a veteran diplomat in his own right and is fluent both in English and French. France backed his candidacy right from the start after it made known its view that it will support any African who could speak French.

Mr. Boutros Ghali has become the first Afro-Arab to win the race, defeating a dozen rivals for the prestigious $ 180,000 (Rs. 4,500,000 approx)–a-year job. He will become the sixth chief of the 46-year-old world body.

Mr. Chidzero was voted 7-2, with six

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abstentions, Mr. Obasanju got 6-3, with six abstentions, Prince Sadruddin Agha Khan fared worse 4-7, with four abstentions, as did the Norwegian Premier, Ms. Gro Harlem Brundtland, 1-9, with five abstentions.

The Indian Ambassador, Mr. C.R. Gharekhan, has expressed happiness at the election of Mr. Ghali as the Secretary-General.

The selection, he said, itself was the result of strong unity displayed by the nonaligned movement. Never did the members waver. The selection of Mr. Ghali was the success of not only the nonaligned movement but also the international community.

Mr. Boutros Ghali, is a French-educated scion of a prominent Coptic family who was propelled on the international scene by former Egyptian President Anwar Sadat's 1977 peace initiative.

Three weeks after Mr. Boutros-Ghali became Minister without portfolio in October 1977, the then Egyptian Foreign Minister and the Secretary of State for Foreign Affairs both resigned in protest against Mr. Sadat's peace overtures toward Israel.

Mr. Boutros Ghali became Interim Foreign Minister and later Deputy Prime Minister for International Relations, his current position, and has proven a tireless advocate of negotiated solutions to conflicts.

Mr Boutros Ghali, who turned 69 last week, had come to represent Egyptian diplomacy abroad although he only held the Foreign Minister's position on an interim basis: Under an unspoken rule of Egyptian politics, the Foreign Ministry goes to Muslims who are the majority in the country.

A year after the signing in March 1979 of the peace agreement between Israel and Egypt, which he helped formulate, Mr. Boutros-Ghali raised two conditions which he felt were indispensable to a long-term settlement of the Arab-Israeli conflict: Palestinian participation in the talks and inclusion of the Soviet Union in any lasting solution to the conflict.

It has taken the parties to the conflict 12 years to meet the two conditions, but they did at the recent West Asia peace conference in Madrid.

Mr. Boutros Ghali obtained a doctorate in international law from Paris Unitvesity after World War II following studies at Cairo University.

Although fluent in English, he speaks it with a French accent and sometimes lets a Gallicism slip in.

He has always been receptive to journalists but is also a quick-witted master of evasive answers.

His grandfather was assassinated while serving as Prime Minister under the British mandate.

The ecumenical and pacifist Boutros-Ghali is married to a woman from Egypt's Jewish community in Alexandria. They have no children.

He began his career as a law professor and journalist before entering Government service where he has served for the past 14 years.

He is an expert on north-south problems such as Third World organisations and is internationally recognised as one of the most knowledgeable experts on Africa.

He boasts a lengthy list of studies, articles, white papers and other publications related to these issues.

Boutros Ghali is the 6th Secretary-General of the 46-year-old world body. His predecessors were:

Name	Nationality	Period
1. Trygve Lie	Norwegian	Feb 1, 1946-Apr 10, 1953
2. Dag Hammarskjold	Swedish	Apr 11, 1953-Sep 17, 1961
3. U. Thant	Burmese	Nov 3, 1961-Dec 31, 1971
4. Kurt Waldheim	Austrian	Jan 1, 1972-Dec 31, 1981
5. Javier Peres de Cuellar	Peruvian	Jan 1, 1982-Dec 31,1991

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WOMAN OF THE YEAR

MEDHA - THE CRUSADER

While the government has pulled out all stops to crush the agitation against the Sardar Sarovar Project (SSP) and disregarded all pleas for a dialogue, it has not been able to subdue or ignore Ms Medha Patkar, who is leading this struggle and whose name has, for thousands of tribals, come to symbolise hope.

From the time of the Sangharsh Yatra in December 1990 to January, 1991 Ms Patkar has become the target of the government's ire against the agitationists. Criminal charges have been filed against her and several activists, who have been the target of other repressive measures also. The latest was her arrest in Shahada while on her way to address a meeting of the 33 affected villages in Dhadgaon.

Arresting her and looking her up in jail will not extinguish the fire by which Medha Patkar walks the banks of River Narmada. She refused bail and forced Maharashtra Government to release her unconditionally.

The arrest came as no surprise to Ms Patkar. A German journalist, Ms Angelika Gardiner, who was accompanying her and was a witness to the entire event, commented that at no stage did the police betray their intentions, and they were more wary than her. At Ferkuva, where the almost monthlong yatra ended, she acquired the reputation of "iron lady"–not without reason–for fasting for over 20 days, drinking only water, and not budging from her demand of stopping the dam work.

Yet the Gujarat government continued its campaign against her and Baba Amte. The chief minister of Gujarat, Mr Chimanbhai Patel, even refused to negotiate with the Narmada Bachao Andolan (NBA), the organisation spearheading the agitation, despite a directive from the Prime Minister.

The odds against the NBA continue to be heavy. In August 1991, the Andolan had embarked on a dharna at Manibeli, which came dangerously close to being submerged by the backwater effect of the dam. The Dhule administration clamped prohibitory orders in the 36 affected villages under section 144 of the criminal procedure code and stated that Ms Patkar and the other activists should not enter the area. All dharnas or demonstrations were banned. Consequently, 68 activists who had launched the dharna forming Samarpit Dals (save or drown squads), were arrested.

Ms Patkar went underground, sparking off reports in some sections of the Gujarat press that she had deserted her tribal comrades and fled the scene of action. A midnight meeting with her put all rumours to rest: she was in the valley itself. She told reporters that

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she did not want to be arrested on false charges and questioned the right of the government to prevent a peaceful agitation.

It was only after the NBA raised the issue of the backwater effect of the dam that the chairperson of the Sardar Sarovar Narmada Nigam Ltd., Mr C.C. Patel, admitted that the height of the river would be raised during the monsoon due to impounding by the dam. Until then, the Gujarat and Maharashtra governments had shouted themselves hoarse by saying that there would be no submergence this year due to the dam.

Things quietened down somewhat after the prohibitory orders were lifted three months later and Sweden announced the Right Livelihood award (known as the alternative Nobel prize) to the NBA. While the organisation was grateful for the recognition it had failed to get in its own country, there was a debate on whether the NBA should accept the award or not.

The NBA decided to accept the U.S. $ 67,000 (Rs. 16,75,000 approx.) award which would be kept in trust as a sort of corpus for the organisation.

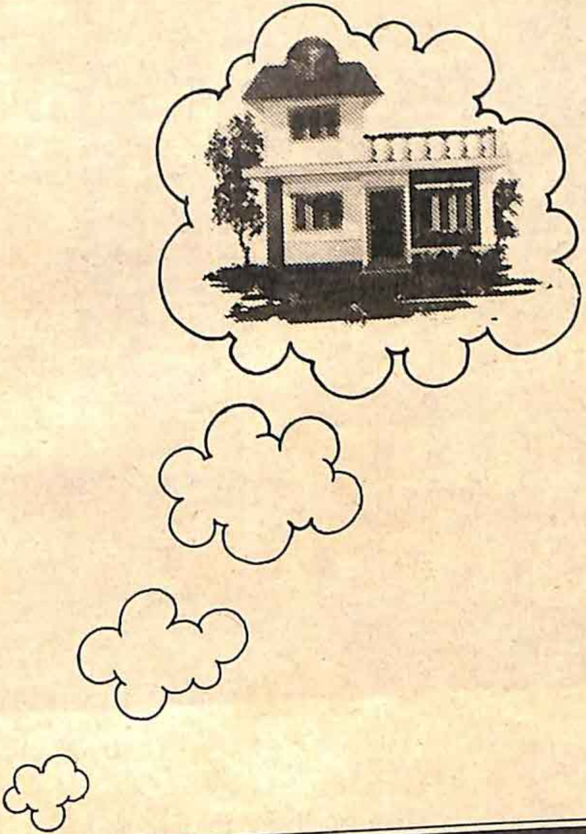
The stand for a review pending stoppage of work on the dam has hardened over the years even as the governments have turned down any negotiations on the issue. This has not fazed the NBA, which manitains that the government has to lend an ear to them at some stage; their fears about the project have been proved right all along.

The tremendous support from worldwide organisations and the stoppage of aid from Japan has also been morale boosting for them, as has the recent alternative Nobel prize. But as one of Ms Patkar's supporters said, "Dignity at home is more important than such awards."

While several battles have been won by the NBA, the war is still being fought. For the tribals, far from merely opposing the dam on the Narmada, the struggle has become a choice between life and death. ■

A Woman of substance

- ● Daugher of freedom fighter and trade unionist Vasant Khanolkar.
- ● Joins as volunteer of the Rashtriya Seva Dal.
- ● Joins the Tata Institute of Social Sciences, Bombay, for a Master's degree, where she develops a keen interest in the upliftment of the rural and urban poor.
- ● Registers for a Ph.D. on 'Economic development and its impact on the traditional tribal societies.'
- ● Conducts a World Bank-aided project for housing about 80,000 slum dwellers in Bombay.
- ● UNICEF requisitions her for two projects on evaluation of the implementation of the Integrated Child Development Programme in Gujarat, Maharashtra and Goa.
- ● Her UNICEF work brings her into contact with SETU–and Ahmedabad-based voluntary organisation for adivasi welfare.
- ● At seminar on 'Issues of survival' as a representative of SETU, she is first exposed to the Narmada dam controversy.
- ● Joins delegation of voluntary organisations to the central government to represent the problems of rehabilitation of the dam oustees.
- ● As she becomes more convinced about the disastrous nature of the project, she leaves her doctoral thesis unfinished to devote herself entirely to the issue.
- ● Sets up the first organisation–Narmada Dharangrastha Samiti in Maharashtra–to unite the scattered tribals to fight the government.
- ● Sets up similar organisations in Gujarat and Madhya Pradesh.
- ● Merges all three to form the Narmada Bachao Andolan.
- ● Sets up the Bharat Jan Andolan to take up environmental issues on a large scale.
- ● Stations herself at Manibeli–a village on the Maharashtra border, that is expected to be the first village to be submerged by the Narmada backwaters–threatening to drown if the government takes no action.
- ● Police crack down on activists and tribals who are refusing to budge from the danger areas, and ban Patkar from entering the 36 villages which are expected to be submerged after the construction of the dam.
- ● Medha Patkar, by now undisputed leader of the tribals, goes underground.
- ● Arrested by Maharashtra Police. She refuses bail and is released unconditionally on the third day.



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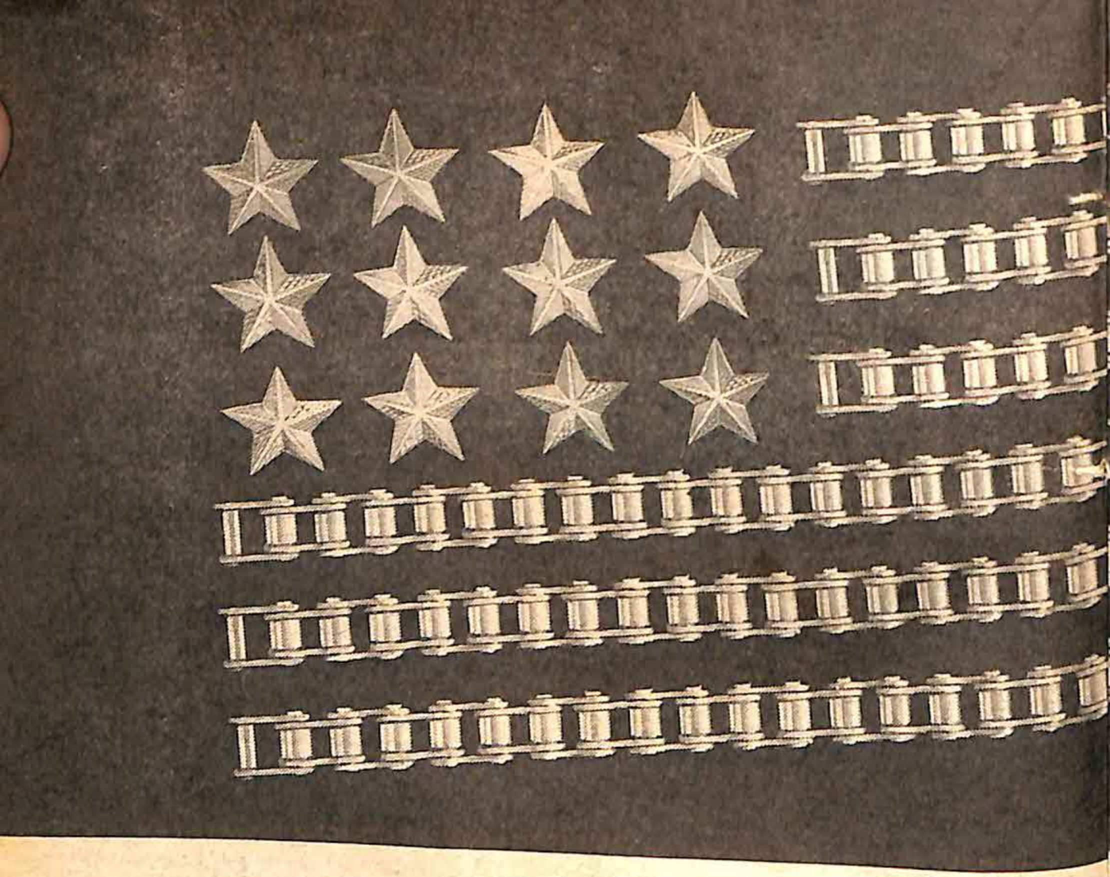

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OLIVES TO THE MID-EAST

Protracted bargaining to put an end to the 43-year old Arab-Israeli conflict has begun. What is at stake is land, borders, Palestinian refugees, fights over scarce water resources and Israel's struggle for survival.

The ball has started rolling from Madrid in early November. The historic process for bringing peace to West Asia is on in right earnest.

In Madrid there was a three day exchange of polemics, a day of reflection followed by a beginning of phase two of th process, the bilaterals. As agreed to between various parties and the two co-sponsoring big powers, the bilaterals were divided into three separate fora–Israel-Lebanon, Israel-Syria and Israel-Jordan-cum-the Palestinian delegation. In actual fact, for negotiation purposes, the last forum has been split into the Israel-Jordan and Israel-Palestinian talks. Now that all the Madrid participants have exploited the cameras and got the bad blood out of their system, the trust factor, or the lack of it, comes to the fore when they get down to the nuts and bolts.

After the phase II bilaterals it would be just a matter of time before the Phase III multilaterals convene. Substantive issues of territory, peace and trust are so closely interwoven with Phase III details such as arms control, water sharing, transit, environment, air corridors, trade, economy and finance that it is impossible to place the bilaterals into neat little separate cubicles, different from the Phase III compartment.

West Bank and Gaza Strip: Jordan earlier administered the West Bank of the Jordan river and Gaza was under Egyptian administrative control. Both were taken by Israel during the 1967 war. The combined population of Palestinians in these two geographically distinct areas is about 1.75 million. Nine lakhs of them are crowded in refugee camps and hamlets in an area of 906 sq.km. in Gaza. They represent the highest population densities anywhere. Over the past few years, Israel has illegally settled at least one lakh Jewish immigrants in the occupied areas of the West Bank in about 130 settlements, almost obscuring the boundaries between the parts seized in 1967 and previous administrative divisions.

It is in the West Bank and Gaza that the Palestinians are looking for a homeland of their own. Israel refuses to grant independence to the Palestinians and currently this is also the stated U.S. position. U.N. Security Council resolutions 242 and 338 call for implementation under the principle of trading territories for peace. Israel's position is that 242 has more or less been complied with. Its stand is based on a flaw in the wording of the English text. Whereas the French text of 242 expressly talks about "the occupied territories", the English text refers only to "occupied territories", Israel says that the latter version does not compel it to return all territories captured and that the return to Egypt of the

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The issues

The main issues in the peace talks:

ISRAEL

- Says it will not trade land for peace.
- Wants separate talks with Arab states and formal recognition from them.

PALESTINIANS

- Demand an independent homeland in the West Bank and Gaza with a capital in Jerusalem.

LEBANON

- Wants Israel to withdraw from a border zone occupied since 1982.
- Wants to talk about scarce water resources.

EGYPT

- Wants Israel to give up all occupied territory and insists this must be the basis for negotiations.

JORDAN

- Supports demands for a Palestinian homeland in the occupied lands.
- Wants an agreement with Israel on water rights, long an issue between the countries.

SYRIA

- Wants Israel to return the Golan Heights.

Sinai peninsula, under a bilateral peace, almost fulfills the requirements of 242 because Sinai comprised the bulk (91 per cent) of "occupied territories."

Successive U.S. administrations have not agreed with Israel on this but at the same time said that the final drawing of boundaries need not conform to pre-1967 positions. In other words, though Israel's interpretation of 242 is incorrect, the territories it returns should take into account its feeling of insecurity and is a negotiable item.

The West Bank and Gaza directly concern Israel and the Palestinians. Some form of meaningful transitional autonomy in these areas, especially the West Bank, is almost an accepted premise even before the bilaterals begin. The details such as specific area and jurisdiction on various issues like education, civic services and law and order need to be hammered out. The talks will determine the extent of autonomy for the Palestinians. Eventually, over a period of five to six years, if nothing else disturbs the process there may be a Jordan-Palestine confederation or even a tri-national state between the Jews, Palestinians and Jordanians. However decided upon, the Palestinian quest is for some concrete manifestation of their legitimate national rights through selfdetermination. The Israelis might surrender Gaza after hard bargaining and to suit their interpretation of 242 they might add this handing over to the 91 per cent of "occupied territories."

The West Bank is the difficult area. It is here that the settlers are, here is where Israel says it feels insecure, especially in the high grounds and, very vitally, it is from the West Bank that most of the subsoil water tables are being used by Israel. What the Palestinians will be looking for immediately is the freeing of settlement activity in the West Bank. The test of American sincerity also lies here. If the U.S. wishes, it can link such a freeze to a $ 10 billions loan guarantee request from Israel due for reconsideration in January. Nearly 65 per cent of all West Bank lands and water are either appropriated by Israel or settled upon by external Jews.

Of all the issues the status of Jerusalem is the most controversial. Hence it has been kept aside for the moment. However, the demand for a freeze on settlements has to include this city, holy to three religions. East Jerusalem, also captured in 1967 but unlike the West Bank annexed by Israel, comprises 150,000 Arabs and 140,000 Jews.

The Golan Heights: Relates to Israel and Syria. The plateau belonging to Syria was captured in 1967, lost by Israel for a while in the 1973 war, then retaken, in addition to some more area. The extra area was ceded back to Syria but Israel annexed the Golan in 1981. About 12,000 settlers are now lodged there. Possible initial solution is some demilitarisation.

South Lebanon: Israel has set up a so-called "security zone" on its northern border after it pulled out in 1985 from its 1982 invasion of Lebanon policed by a force of 3,000 from the "South Lebanon Army." ■

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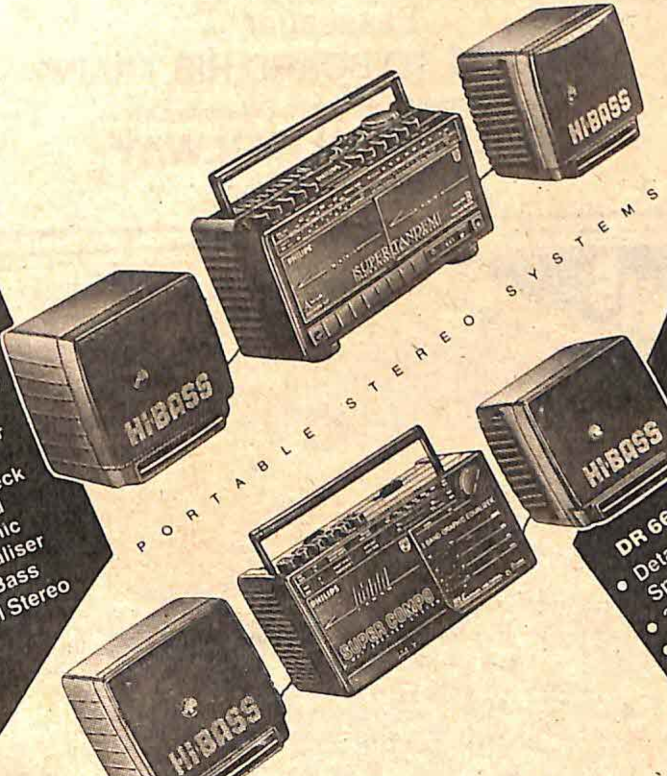

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BRIDGE ON THE RIVER

Karnataka and Tamil Nadu have locked horns over the waters of Cauvery once again. The dispute is century-old. However, of late, the real grievances have been outshadowed by regional chauvinism and political one-upmanship.

The Cauvery river rises in the picturesque hills of Karnataka's cascades down or Kodagu its tumultuous course, meanders through Karnataka before it enters Tamil Nadu and flows into the Arabian Sea, in its 736 km. journey.

In both Karnataka and Tamil Nadu, the river is deified and venerated since the Vedic times. The grateful populace of Coorg even name their daughters and sons Kaveriappa and Kaveriamma after the river. And the official address of the Chief Minister in Karnataka, an impressive two-story edifice on Kumara Kripa Road, is called Cauvery.

People of both the states not only consider Cauvery as the very incarnation of God but are also possessive about its water. For over a century, Tamil Nadu has complained that Karnataka usurps most of the river water even before it can enter its territory. The state also accuses Karnataka of building too many dams across the river which 'impounds' so much water that it leaves very little to trickle downstream to the starving farmers in the Thanjavur region.

Karnataka denies these allegations vehemently. It has counter accused the state saying that Tamil Nadu has benefitted from the Cauvery more than its share for over half a century by developing vast stretches of land with irrigation from the river's water.

According to Karnataka, Tamil Nadu is only making up its past losses and demanding its own pound of flesh. But Tamil Nadu wants to continue to irrigate the area it is already irrigating with the Cauvery. Karnataka dismisses this as "prior appropriation right" which according to it is "not an absolute right."

In fact it is this "prior appropriation right" – appropriate or snatch as much water as possible first and then later claim it is your due share in case of a tussle – that is the crux of most water sharing disputes in the world. Whether by design or accident, Tamil Nadu is now demanding this right. And Karnataka too demands the same, though in a less subtle way: the state has been stalling a solution so that it can go ahead with as many irrigation projects as quickly as possible and then claim that it should be allocated the water it is already using.

According to Karnataka, Tamil Nadu was able to use more water earlier with the help of the 1924 agreement which was an offshoot of another pact in 1892, both reached under the ageis of the British government. According to the strictures passed then, the erstwhile Mysore State (now Karnataka) had to ask the Madras State (now Tamil Nadu) for permission before it constructed any dam across the river to impound water for its irrigation pur-

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poses. Karnataka dismisses these agreements as colonial impositions by the foreign government which it say resulted in 'lopsided' development in the region.

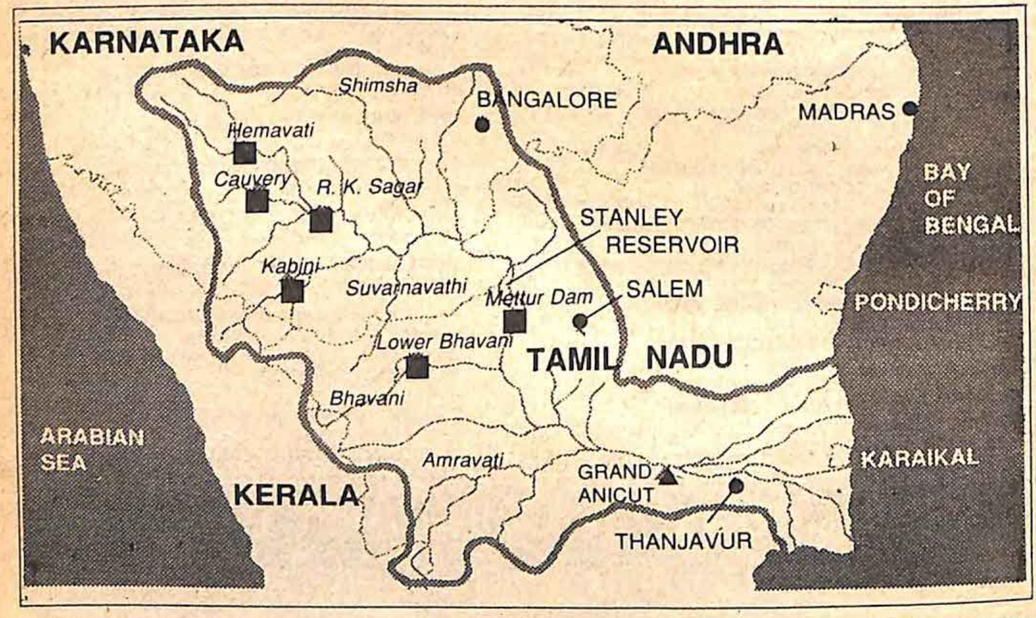
The prior appropriation right may be a potent weapon to garner maximum water but it will create a human tragedy of gigantic proportions. If Tamil Nadu is denied this right now it means misery and starvation for its farmers. But Karnataka is in the same predicament if it is not allowed to use more water than it does now: the people can not use the river for irrigating more land but have to watch the water flow downstream into Tamil Nadu.

Both the states do appear to have valid claims. But fair justice demands that the interests of the farmers of both Karnataka and Tamil Nadu should be protected – which means that they have to make a certain amount of sacrifice to reach a permanent, amicable and viable solution. For public consumption, though, both the states cry hoarse saying they are ready to sacrifice a part of their shares to resolve the dispute but in actual practice they are not serious at all.

The Indus Commission of 1942 ruled that if there was no agreement, the rights of various region should be determined by enforcing "equitable apportionment" every region gets a 'fair' share of the waters. The International Law Association has framed guidelines known as the Helsinki Rules of 1966, to help determe "fair and equitable" distribution of river waters among contending regions.

The appointment of a tribunal by the centre in 1990 to resolve the dispute at the instance of the Supre Court will serve no purpose if the basic issues underlying the crisis like justiciablility or of prior appropriation right and other guidelines and criteria are first sorted out across the table.

Accurate statistics are hard to come by with both Karnataka and Tamil Nadu tailoring date to suit their respective interests, bloating their demands and exaggerating their needs. According to statistics furnished to the Cauvery Fact Finding Committee, appointed by the centre in 1972, the total yield of water in the 736 km. long Cauvery river is 740 tmcft (thousand million cubic feet). ■



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FOR A NEW US PRESIDENT

This is the year of the U.S. Presidential elections. The National Conventions of the major parties, the Republican and the Democratic, are held during the summer to select delegates by primaries, conventions, committees, etc.

A staggering 145 candidates will seek to replace, the U.S. President, Mr. George Bush, when his current four-year term expires this year, according to the federal eletion commission. Mr. Bush himself is seeking reelection.

Among the presidential aspirants are a New Yorker named George Washington America, who claims he is America's best thinker, the political maverick, Lyndon Larouche, who is currently in a federal prison in Minnesota for allegedly engaging in or tolerating credit card fraud to raise campaign funds, Mr. Ralph Nader, the consumer advocate, Millie Howard, who says she is a fiscal conservative who wants to freeze government, cut it, and limit salaries and benefits of government workers, Russell Hirshon, a performance artist, and James "Bo" Gritz, a former green beret lieutenant-colonel and highly-decorated Vietnam veteran.

In all, among those seeking the presidency are 59 Democrats, 24 Republicans, 21 Independents, 3 Libertarians, 4 others, and 34 political "unknowns."

The election commission spokesman, Mr. Fred Eiland, said: "Not all those who file are considered candidates for our purpose." The National Conventions of both major parties are held during the summer of presidential election year. Earlier, each party selects delegates by primaries, conventions, committees etc.

For their 1988 National Convention, the Republicans allow each state a base of 6 delegates at large; the District of Columbia, 14; Puerto Rico, 14; Guam and the Virgin Islands, 4 each. In addition, each state receives 3 district delegates for each repsentative it has in the House of Representatives, regardless of political affiliation. This did not apply to the District of Columbia, Puerto Rico, Guam and the Virgin Islands.

Each state is awarded additional delegates at large on the basis of having supported the Republican candidate for President in 1984 and electing Republican candidates for Senator, Governor and U.S. Representative between 1984 and 1987 inclusive.

The number of delegates at the 1988 convention, held in New Orleans starting August 15, was 2,277.

The Conventions: All each convention, a temporary chairman is chosen. After a credentials committee seats the delegates, a permanent chairman is elected. The convention then votes on a platform, drawn up by the platform committee.

By the third or fourth day, presidential nominations begin. The chairman calls the roll of states alphabetically. A state may place a candidate in nomination or yield to another state.

Voting, again alphabetically by roll call of states, begins after all nominations have been made and seconded. A simple majority is required in each party, although this may require many ballots.

Finally, the vice-presidential candidate is selected. Although there is no law saying that the candidates *must* come from different states, it is, practically, necessary for this to be the case. Otherwise, according to the Constitution (see Amendment XII), electors from that state could vote for only one of the candidates and would have to cast their other vote for some person of another state. This could result in a presidential candidate's receiving a majority electoral vote and his running mate's failing to.

The Electoral College: The next step in the process is the nomination of electors in each state, according to its laws. These electors must not be Federal office holders. In the November election, the voters cast their votes for electors, not for President. In some states, the ballots include only the names of the presidential and vice-presidential candidates; in others, they include only names of the electors. Nowadays, it is rare for electors to be split between parties. The last such occurrence was in North Carolina in 1968; the last before that, in Tennessee in 1948. On three occasions (1824, 1876 and 1888), the presidential candidate with the largest popular vote failed to obtain an electoral-vote majority.

Each state has as many electors as it has Senators and Representatives. For the 1984 election, the total electors were 538, based on 100 Senators, 435 Representatives, plus 3 electoral votes from the District of Columbia as a result of the 23rd Amendment to the Constitution.

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INDAL
ALUMINIUM BUILDING SHEET

Wednesday in December, the electors cast their votes in their respective state capitals. Constitutionally they may vote for someone other than the party candidate but usually they do not since they are pledged to one party and its candidate on the ballot. Should the presidential or vice-presidential candidate die between the November election and the December meetings, the electors pledged to vote for him could vote for whomever they pleased. However, it seems certain that the national committee would attempt to get an agreement among the state party leaders for a replacement candidate.

The votes of the electors, certified by the states, are sent to Congress, where the president of the Senate opens the certificates and has them counted in the presence of both Houses on January 6. The new President is inaugurated at noon on January 20.

Should no candidate receive a majority of the electoral vote for President, the House of Representatives chooses a President from among the three highest candidates, voting, not as individuals, but as states, with a majority (now 26) needed to elect.

Presidents

1. Washington (F)
2. J. Adams (F)
3. Jefferson (DR)
4. Madison (DR)
5. Monroe (DR)
6. J.Q. Adams (DR)
7. Jackson (D)
8. Van Buren (D)
9. W.H. Harrison (W)
10. Tyler (W)
11. Polk (D)
12. Taylor (W)
13. Fillmore (W)
14. Pierce (D)
15. Buchanan (D)
16. Lincoln (R)
17. A. Johnson (U)
18. Grant (R)
19. Hayes (R)
20. Garfield (R)
21. Arthur (R)
22. Cleveland (D)
23. B. Harrison (R)
24. Cleverland (D)
25. McKinley (R)
26. T. Roosevelt (R)
27. Taft (R)
28. Wilson (D)
29. Harding (R)
30. Coolidge (R)
31. Hoover (R)
32. F.D. Roosevelt (D)
33. Truman (D)
34. Eisenhower (R)
35. Kennedy (D)
36. L.B. Johnson (D)
37. Nixon (R)
38. Ford (R)
39. Carter (D)
40. Reagan (R)
41. Bush (R)

F–Federalist; DR–Democratic Republican; D–Democratic; W–Whig; R–Republican' U–Union. ■

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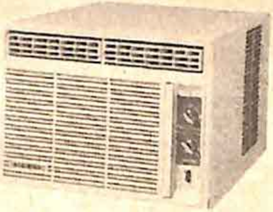
GENERAL



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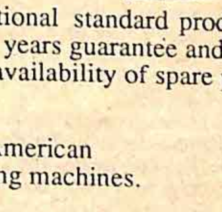

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PART ONE

SCIENCE AND TECHNOLOGY

SCIENCE UPDATE

CHEMICAL DEPENDENCY

Alcoholics are immoral people who choose to drink. Drug addicts are muggers and thieves. People who cannot control their chemical use are weak- willed. For decades, sentiments like these have reflected our cultural beliefs about the chemically dependent. Though society is moving toward a more tolerant and compassionate view of chemical dependency, the prejudice still exists very powerfully in the minds of many who are attempting to overcome their addiction. Feeling of shame guilt and low self worth often cause those who are chemically dependent, to deny the problems exist. And so the global impact of this always remains grave.

There was a time when the medical profession believed that Chemical Dependency (C.D.) was merely the symptom of some other emotional disorder. Treat the *Real Problem* and the alcoholism will automatically take care of itself. It took many years and countless suffering by alcoholics until the medical profession finally realised that the problem was alcoholism not *something else*, and when they began to address alcoholism as a primary illness, progress began. The work of Jellinek was largely responsible for the shift to an illness model. In essence, in his research and writings, he said, *"Hey, World, You guys mislabeled this thing. You put it in the sin bin, and it really belongs to the disease pile."*

Still, it wasn't until 1956 that the American Medical Association finally recognised alcoholism as a disease affecting body, mind and soul. Since then, people have been more willing to accept that alcoholism is indeed an illness, that once the alcoholic starts to drink, he may no more control his compulsion to drink than a tuberculosis patient can control his coughing. C.D. is a disease that can be described and diagnosed. But if left untreated, the disease is 100% fatal. That is the bad news. The good news is that C.D. is treatable, and there is no reason to write off anyone as hopeless.

Classification of drugs – Drugs are classified into five. They are Narcotics or opiates, Depressants, Stimulants, Hallucinogens and Cannabis. Alcohol comes under depressant drugs as this a central nervous system depressant.

What is Alcohol? Chemically it is C_2H_5OH. The alcohol people drink is ethyl alcohol. It is colourless and has a sharp burning taste. It is the product of normal fermentation of sugars by yeast. Alcohol whether in small or large quantities takes away many substances from the body that are necessary to maintain health.

Blood Alcohol Content (B.A.C.) It is the amount of alcohol in the blood. Breathalyser test is used to determine the B.A.C. The blood alcohol content is described as the weight of alcohol (milligrams) in a given quantiry of blood.

Tobacco claims more adult lives than any other addiction

Alcoholism is a primary, progressive, terminal and permanent disease.

Primary means in itself it is a disease, not the symptoms of any other disease.

Progressive – Once contracted, alcoholism progresses until death. One may discontinue for some days or months. When alcoholic drinks again, he continues to drink.

Terminal – An excessive drinker may meet with a road accident, may have a cirrhosis, heart attack or may with any complication die. But the factor which induces the complication itself is alcohol.

Permanent – Alcoholism can be arrested. But an alcoholic cannot be a moderate or social drinker anymore, even if he is sober for many years. Once alcoholic ever alcoholic.

Who is an Alcoholic? "Alcoholics are those excessive drinkers, whose dependence on alcohol has attained such a degree that it shows a noticeable mental disturbance or an interference with their bodily and mental health, their interpersonal relations and their smooth social and economic functions or who show prodromal signs of such developments". (W.H.O. definition).

"Someone whose drinking causes a continuing problem in any compartment of his life". (Marty Mann).

For us, alcoholism is a disease and so alcoholic is one who is sick in body, mind and

International Drug-Scene

The menace of drug addiction is spreading at an alarming rate all over the world. A report of W.H.O. estimates that nearly 50 million people in the world are drug-addicts, 30 million smoke marijuana, eight million cocaine, 1.7 million opium, 700,000 heroin and the remaining consume narcotics such as smack etc. According to the International Narcotics Control Board and as the seizures of drugs in recent months show, Pakistan has emerged as the most convenient point for smuggling out a huge quantity of drugs like opium, heroin, smack and mandrax.

In Latin America, cannabis was one of the earliest drugs. It continues to grow and be exploited as it is in Africa and Middle East where it was unknown till 1940. Cocaine is grown and processed in Bolivia and neighbouring counrties. In the whole region of South America there is enormous trade in cocaine. There are 200 substances extracted from well known local coca plants.

The epidemic of cocaine (crack) exposes the young Americans to a nightmare of addiction. Drug-abuse has become the number one health problem in the U.S.A. as an increasing number of Americans are using various drugs, being addicted to them and even dying from overdoses. Americans are estimated to spend about $ 90 billion a year on drugs.

According to US press reports, nearly four million Americans regularly use cocaine, more than 20 million Americans take marijuana at least once a month and 490, 000 use heroin. Drugs have permeated virtually every geographic area and socio-economic level in the U.S. with the people aged 24-40 being the fast growting and the largest drug-using group. What is more serious is that the problem has reached down to the high school level.

A survey by the National Institute on Drug-abuse showed that 36 percent of the high school students were reportedly using drugs in the United States. In India about 700,000 young people are addicted to drugs, mainly brown sugar.

In Thailand, there are heart breaking cries about drug-dependency. One authority says 45% of the population are opiate dependents. In Pakistan and Bangladesh drug-abuse has reached an unprecedented proportion. In Gulf and West Asian countries cannabis and opium are the most commonly used drugs. There is now an illegal production of 40,000 tons of cannabis and 4,500 tons of illegal and illicit opium per year. The main source of supply has moved from the "Golden Triangle" (comprising the border areas of Thailand, Burma and Laos) to the "Golden Crescent" (comprising Iran, Pakistan and Afghanistan).

Drug trafficking has a well-organised network in all Europe and America and most other regions. A report from Philippines says that dead babies and framed pictures of Iran's Ayatollah Khomeini and Nobel Prize winner Mother Teresa are being used to smuggle drugs across Asian borders. Dead bodies even of young children who had just died were stuffed with heroin and sent across borders in coffins. Heroin had also been found in statues of the Buddha.

From Turkey crude opium is transported by drug traffickers into Africa and converted into a crude form of Morphine. This in turn is transported to European countries, mainly the French port of Marseilles, where experts convert it into heroin. Then it is smuggled to other parts of the world, mainly U.S.A. using new and novel trafficking techniques. Other countries which grow and traffic in opium and heroin are Pakistan and India.

All the major European countries smuggle in drugs of various kinds and the young, especially students, are in the grip of drug addiction.

soul.

Stages of addiction: According to psychologist Jellenick, there are four stages of addiction – addiction takes place due to the interaction of three factors, such as personality of the user, addictive nature of the substance and the environmental forces.

Loading a Cigarette with Brown Sugar...........

Symptomatic or Pre-alcoholic: Here people start drinking for company sake or socialisation. We see most of the social drinkers belong to socially accepted cultural groups. They take one or two drinks at the most. Out of this 20% may turn out to be problem drinkers.

Prodromal Stage: We can call them "Black out groups'. Blackout is an alcohol-induced amnesia, wherein the person may go through many activities without being able to recall even a trace of these activities.

2.27 Lakh Registered Drug Addicts

About 2.27 lakh drug addicts were registered with various de-addiction counselling and after-care centres during 1990-'91 Minister for Welfare Sitaram Kesari told the Lok Sabha on 19 August, 1991.

The Minister told Mr. Harin Pathak in a written reply that no census of drug addicts has been undertaken and hence the exact number of drug addicts in the country could not be indicated.

He said the Government was taking various measures to control the situation. The steps taken include improvement in the inter-state and inter-agency enforcement co-ordination, training of customs, police and other enforcement officers and improvement in international, regional and bilateral co-operation in drug enforcement by ratifying the UN Convention of 1988 and signing bilateral agreements with several countries like USA, Mauritius and Afghanistan.

Later on, their bodily system is affected though they take drink for psychological purpose of relaxation and recreation.

The above two categories need only alcohol education to prevent further deterioration and reach complete abstinence. 62-75% of our general population belongs to this group. The physical symptoms seen in these are gastritis, interference with digestion and diseases such as beri-beri and anaemia.

Crucial Stage: Here is a compulsion to take alcohol, as the person has developed tolerance in the bodily system. There is loss of control over the time and place of drinking. The person develops an elaborate defensive system to rationalise his drinking and thus deals with his feelings of guilt and remorse. He exhibits a grandiose behaviour which is usually inconsistent with both his financial and professional capabilities. Aggressive behaviour is manifested due to lowered level of glucose in the brain. As alcohol is a central nervous system depressant, understanding value system, moral principles and principles of relationships degrades steadily as years go by. There may be definite periods of abstinence to prove others that he is not an alcoholic. Physical damage for liver, heart, blood vessels, urinary system, nervous system takes place. Depression, alcoholic paranoia (suspicion), delirium tremors are a few psychological diseases. 14 – 20% of our general population belongs to this stage.

Chronic Stage: During this stage, prolonged unplanned drinking with anybody at anytime using any type of drink is seen. One gets drunk even with small amounts of alcohol. This decrease in tolerance is due to severe physical deterioration. The drinker is so dependent on alcohol that he will lie, borrow, or steal to maintain the supply of alcohol. He suffers from feelings of fear– frightened to cross a road, Paranoia – refuse to eat for fear of being poisoned, Hallucinosis – Auditory, visual and tactile-feeling things on skin, Psycho motor inhibitions – not able even to tie his shoe lace without a drink. And all sorts of bodily ailments too. Finally, he becomes a mental patient and dies.

Drug Abuse: W.H.O. speaks of drug abuse as "persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice".

The phenomenon of drug abuse has three stages 1. The individual takes a drug for certain specific immediate results which he values often in spite of a clear awareness of its adverse effects in the long run.

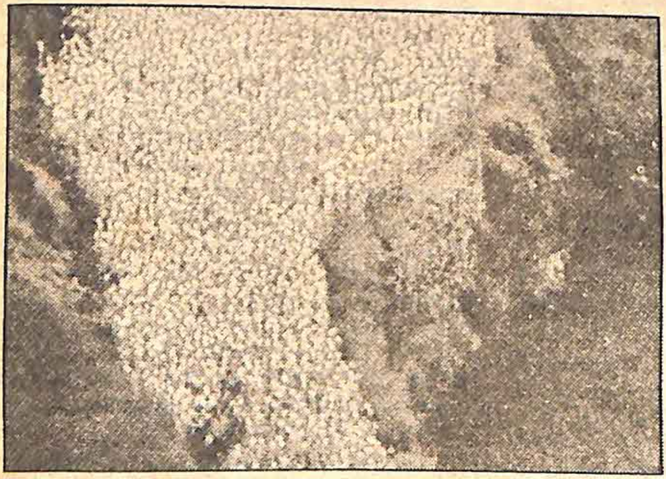
2. The individual tends to repeat the drug to re-experience these effects. In some individuals, such repetition may create tolerence, while others continue to experience similar effects at the same dose or frequency.

3. If the drug use is continued over a period of time, it leads to complex bio-chemical relationship in the body of the individual. If the drug is not made available it manifests this lack in distressing psychological and physiological symptoms. These are called withdrawal reactions.

A person with a drug addiction can be described as one who has both physical and psychological dependence on a drug plus the increase of tolerance with the impairment in the functioning in any of the following areas as personal, financial, work, family and social spheres.

The New Jersey Study conducted among college students indicated that there were three significant factors that played an important role in the drug abuse. They are pleasure, peer group pressure and curiosity. But so far science could not find out whty some people become chemically dependent and others not. According to a recent study done in the U.S.A, from among 10 people who use alcohol, one becomes alcoholic.

Theories about the disease alcoholism: There are three primary theories as to the cause of the disease. The genetic theory explains alcoholism as a result of body make-up – a predisposed reaction to the drug, based on chromosomes, genes or hormonal deficiencies.



Forbidden Poppy fields in Pakistan's North West Frontier Province.

The psychological theory indicates that some people have a preset disposition or personality which influences reactions to alcohol use.

The sociological theory proposes that alcoholism is a learned response and that addiction results from society's influence. Many believe a combination of these three theories causes the disease. Currently, however, greater emphasis is placed on recovery from the disease rather than its causes.

Short Term Effects: A few drinks often make the drinker more spirited, aroused or even aggressive........ because alcohol is "depressing" the part of the mind which usually inhibits this behaviour. Small amounts of alcohol usually bring about a dilation of the small blood vessels in the skin and induce minor changes in heart rate. This results in slight flushing and a feeling of warmth, adding to the feeling of relaxation.

In moderate doses, the drinker becomes less alert to activities around him. Feelings and thoughts are expressed freely as the drinker feels less inhibited, friendlier and more socially responsive. Larger quantities of alcohol can alter perception, cause staggering, blurred vision and other manifestations of drunkenness.

These effects vary according to the drinking experience of the individual, body size, state of mind, even the surroundings of the drinker. One person may become emotional or amorous, another aggressive and hostile.

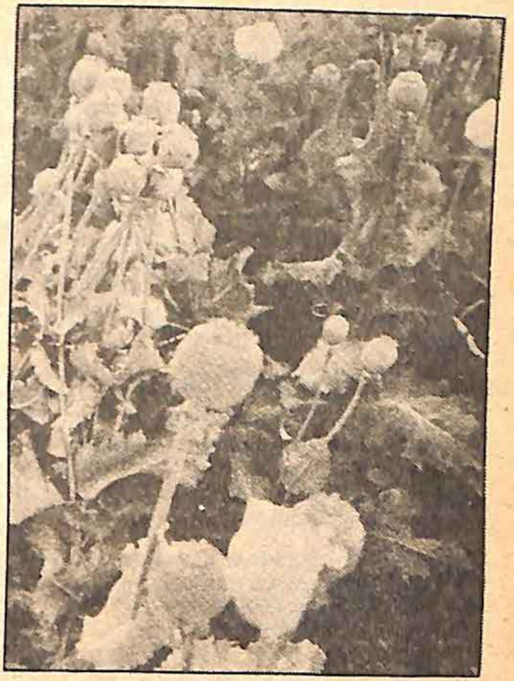
Short-term effects also include light-headed feelings, dizziness, loss of motor control, slowed reaction time, personality and character changes such as depression, anxiety, low frustration tolerance and feelings of powerlessness.

For most people, most of the time, the short term effects of drinking are hardly noticeable. However, even if it is not noted, intoxication alters the mental, behavioral and physiological capacities of drinkers.

Long Term Effects: As the individual's drinking increases in amount and frequency, new physical, psychological, and social complications come into play. To understand this progression, it is useful to consider three key terms: Tolerance, physical dependence, and psychological dependence.

Tolerance to alcohol develops when an individual requires larger amounts to achieve a given effect. So an individual who used to get "high" or "feeling good" on two drinks, may now require four drinks to get to the same state.

Physical Dependence develops when an alcohol or drug user can't stop consuming alcohol without suffering withdrawal symptoms. These symptoms vary according to the specific drug, the amount used, and the length of time it has been used. These symptoms often include tremors, vomiting, delirium, cramps and in severe cases, convulsions or even death. This occurs because the body has actually adapted itself to the presence of the drug.



The Papaver Somniferum ready for harvest

Psychological Dependence is a state of mind in which the alcohol user becomes so preoccupied with the taking of alcohol or drugs that it is difficult to do without. There is an intense craving, a compulsion to continue.

As drinking becomes heavier and more prolonged, various physical manifestations show up: loss of appetite, vitamin deficiency, infection, skin problems and often sexual impotence. Damage of the liver, heart and brain cell also occurs. Short term memory loss may become permanent loss.

Problems – A World View: The World Health Organisation (W.H.O.) is the main international agency concerned with alcohol and drug problems in the world. WHO's concern with Chemical Dependency prob-

In the world scene India is considered to be a spiritual country. Many westerners come here to pray, meditate and to have close contact with God. If we speak to the world about alcohol, drug problem in India, many may not believe us because of our spiritual heritage.

In Manu, one of the ancient Vedic literatures, we see the description of the mortal sins in this order: "Killing Brahmins, drinking alcohol, stealing, sleeping with the wife of Guru...". Drinking alcohol is considered as a sin because of its capacity to cause impaired thinking, imprudence, animalistic behaviour and finally an immoral life.

In the pre-historic period, alcohol was the only tranquilising drug known to mankind. Caraka Samhita, the most authentic work in the field of medicine in ancient India expounded by Athreya Punarvasa and compiled by the great sage Agnivesa and Caraka and Dridhabala, has devoted two chapters to alcoholism in Vol-I and IV.

Although the problem of chemical dependency has been existing since time immemorial, a lot of people still do not know its nature and extent of damage it can cause.

Since India has a large population of 850 million people, the problem of addiction is of larger dimensions. However there is no dependable statistical data prepared either by the government or by private agencies.

In Pondicherry, Surya and others found that 3.6% were alcoholics and drug addicts. In Vellore Varghese and co-workers found that 2/1000 were addicted to alcohol. In Kerala certain pockets like high ranges and fishermen of coastal belt were found to be more addicted to alcohol and cannabis (Ganja). A random survey of these areas showed 18% of addiction while general population showed only 14/1000 alcohol addicts. Drug scene is seen only in towns like Trivandrum and Ernakulam.

Hard drugs like heroin (brown sugar) are taken by affluent groups and professional college students. Altogether drug experimenting category of youth comes to 2/1000 population. Coming to Northern India, in a rural community in West Bengal, Nandi and associates found the proportion of alcohol addicts to be 19/1000 and in Lucknow city Thakkore found it to be 18.6/1000. In a community survey around Agra area, Dube found 22.7/1000 individuals addicted to some drug or the other. Of these 59.4% used alcohol, 17.5% used cannabis and the rest used multiple drugs.

Mohan D. et.al. (1984) found the following facts about Delhi de-addiction clinic at AIIMS. It is evident that the absolute numbers and the proportion of patients with heroin dependence has been increasing steadily since 1980, prior to which no case of heroin dependence was registered with AIIMS de-addicts. We in TRADA, Kottayam clinic have found the same. Dube studied a sample of general population in Punjab and found that 54.3% of the urban sample and 40.4% of the rural sample, abused synthetic drugs such as methaqualone. Deb and Jindal studied the pattern of alcohol use in selected progressive villages around Ludhiana and found a prevalence rate of 741/1000 among the adult males (age 15 and above).

Percentage Prevalance Rate of Different Drugs at Various Centres (1981)

Drug	*Bombay*	*Madras*	*Delhi*	*Jaipur*	*Hyderabad*	*Sagar*
Alcohol	*15.1*	*9.5*	*12.2*	*9.8*	*11.8*	*9.3*
Tobacco	*8.1*	*15.2*	*10.0*	*9.2*	*8.1*	*10.9*
Painkillers	*12.1*	*1.2*	*20.9*	*2.3*	*5.2*	*15.2*
Cannabis (Ganja)	*0.4*	*1.03*	*1.5*	*0.9*	*1.0*	*8.4*
Opium	*0.4*	*0.3*	*0.5*	*0.2*	*0.1*	*0.3*
Barbiturates	*0.6*	*1.4*	*0.4*	*0.4*	*0.5*	*0.5*
L.S.D.	*0.07*	*0.4*	*0.2*	*0.2*	*0.1*	*0.2*

Addiction:

According to the study done by I.C.M.R. (Indian Council of Medical Research) the abuse is more likely to increase than decrease. The extent and nature of the problem among the students is serious, especially because there seems to be a shift from abstinence. There are disturbing signs which show that the situation is likely to worsen and get out of hand, if adequate measures are not adopted to curb the evil. This is proved by the study of Additydrjee and D. Mohan et.al.

Heroin dependence: The New Delhi Experiments by Addiyarjee, D. Mohan et.al. →

Year	Number	Percentage of patients from total attendance of de-addiction clinic
1980	0	0.0
1981	9	12.0
1982	20	10.2
1983	41	25.0
1984	35	37.8

Prevalence study done by Dr. J. Chunkapura at TRADA Clinic, Kottayam, Kerala

Year	Number of patients	Alcoholics	Drug addicts
1987	210	200	10
1988	254	221	25
1989	282	250	32
1990	320	284	36
1991	350	312	38

Indian Scene

Believe it or not, there are more than 4,00,000 drug addicts in Bombay alone. Two of them die each day owing to repeated intake of lethal drugs. Drug addicts and alcoholics are carriers of AIDs due to poor resistance and unsterile techniques.

What is brown sugar? Chemically, brown sugar is a semi-synthetic, highly adulterated form of heroin. It is one of the most highly addictive, cheaply available drugs.

Tobacco and alcohol are legalised lethal drugs. Indian cigarette and beedi contains much more nocotine than cigarettes in other countries do. With regard to tar content of cigarettes, India is second in the world as Chinese cigarette contains more tar, says W.H.O. expert committee report on smoking. One who is a passive smoker gets more DNs gas (cancerous) than the smoker himself.

Various methods of drug intake are oral consumption, smoking, sniffing, chasing and intravenous injections. Tablets and bhang are orally taken while tobacco and cannabis are smoked. Cocaine is sniffed like snuff powder while heroin and brown sugar are chased, pethedine, cocains, heroin and brown sugar are injected after dissolving.

How to identify a drug addict? The following symptoms are early warning signs of drug addiction.

1. *Pus-point pupils even at night.*
2. *Loss of appetite and loss of weight (upto 20-30 kg)*
3. *Immediately on awakening, the addict may rush out of house with a sense of urgency.*
4. *Personal hygiene is neglected.*
5. *Sudden craving for sweets*
6. *Sits longer time in the toilet and behind closed doors.*
7. *Things and articles may be missing from house.*
8. *Mood fluctuations and telling of lies*
9. *Occasional back ache, drooping eye lids.*
10. *Sexual promiscuity (initially); later impotence.*
11. *Loose tobacco, evidence of pudi, vial or stained coin, candle and foil etc.*
12. *Cold turkey (withdrawal symptom seen as the absence of drug in an addict) fever, restlessness, mental confusion, goose flesh, etc.*
13. *Scartch marks on limbs, needle marks, abscesses.*
14. *The addict will have a zomble look, with glassy eyes.*

Most drug addicts are male, but there are several girls hooked on the drug like tobacco and alcohol. The ratio is 1 : 25. Common source of drug in India is from Golden Crescent and Golden Triangle. Bombay is a transit area. Yet drug addiction is more in North East India, Manipur as drug reaches there easily from Thailand and Burma. Drug users become peddlers. Usually drug peddlers operate from "joints" which are mainly in the economically backward areas.

Yes, we all thought that drug addiction was an evil of the West. It is here now, right in our midst. You have a chance to save others and yourself through awareness and knowledge of drug addiction. ☐

Sr. (Dr) Joan Chunkapura,
Chief Therapist, TRADA.

An anti-drug poster that caught wide attention-1983

lems dates back to 1966, when an expert committee on mental health was convened to consider services for the prevention and treatment of dependence on alcohol and other drugs.

In most of the countries alcoholism is the most neglected disease, even though it ranks the third leading cause of death. Main areas connected to Chemical Dependency throughout the world are, the family, crimes, accidents, health, suicides and homicides.

The family: The disruptive effect of alcoholism on the entire family is an area of growing concern. Two closely related aspects of this problem are of particular concern: the relationship of alcohol and family violence and the children of alcoholic parents. Several studies link alcohol with physical and emotional abuse in the family.

In one survey of women in Paris who sought emergency aid, women reported that 60% of the husbands were excessive drinkers and that nearly 70% of the assaults involved some drinking. Another survey of 100 abused wives reported that 45% of abusing husbands were daily or weekend drinkers.

Violence is not an isolated phenomenon affecting only one victim in the family. The husband who beats his wife often is a battering father. Estimates suggest that alcohol may play a key role in as many as one third of all reported cases of child abuse in the world. Children of alcoholics are at increased risk for a number of problems. These problems include lower IQ's, hyperactivity, psychological and emotional problems. These children are at significant risk for alocholism in later life.

There are at least 28 million Americans who have at least one alcoholic parent. Twenty percent of the children in any classroom come from alcoholic families.

In U.S.A. alcohol abuse accounts for more family troubles than any other single factor. In 1987, Gallup poll found that one in four families reported a problem with liquor at home. According to U.S. Health Secretary, alcohol is the culprit in 40% of family-court cases and accounts for between 25% and 50% of violence between spouses. A weekly Reader Study earlier reported that 36% of 4th graders in the U.S. were pressured by peers to drink. Kids are making decisions about alcohol and drugs when they are 12–14, whereas in the preceding generation they made those decisions at ages 16–18, says the Executive Director of the American Council for Drug Education. As many as 45% of U.S.A.'s more than 250,000 homeless are alcoholics.

Crimes: In a number of countries 30% of the crime is known to be alcohol-related. In the U.S. a Department of Justice survey estimates that nearly a third of the nation's 523,000 state prison inmates used alcohol or drugs heavily before committing rapes, burglaries and assaults. One study of adolescents in Italian prison for assaults reported that alcohol was involved in 61% of their assaults resulting in tissue damage and in 67% of assaults resulting in death.

In most assaultive and sexually assaultive situations alcohol is present in both assailant and victim. The developing trend throughout the world is that there is an increase in the relationship of the narcotic addiction and criminal activity, says the British Journal on Addiction. Probably as many as two thirds of all addicts now engage in crimes against persons (usually mugging and armed robbery) and as many as one third of all addicts commit these crimes as their primary means of support.

Drunken drivers were responsible for approximately half the 46,000 driving fatalities in the U.S. Alcohol was implicated in upto 70% of the 4,000 drowning deaths and 30% of the nearly 30,000 suicides.

WHO reports that alcohol is a significant factor in assaults in general, for 72% of the perpetrators and 70% of the victims alcohol is seen as playing a role. In attempted and completed rapes, alcohol again was involved: for 50% of the rapists and for 30% of victims alcohol was a prominent feature. In cases of robbery, upto 22% of the offenders had been drinking.

A 1988 review of the world literature – although critical of many studies on its topic of alcohol, violence and aggression – concluded: "It is quite clear that consumption of alcohol is associated with a wide range of violent acts which include accident, suicide, sexual assault, violence within the family, felony and homicide."

In summary, the onset of addiction is highly associated with substantial increases in property acquisitive crime and dramatic increases in violent and drug offense crimes. The onset of addiction realises an increase in all criminal activity.

Health: Alcohol and other drugs have an impact on the health care system. Studies have consistently shown that one third of all hospitalised persons in the world have significant relation to alcohol and other drugs. In Chile 30% of the medical and mental care budget has been devoted to the treatment and consequences of alcohol use.

In Yugoslavia, 50% of the men admitted to mental hospitals have a main diagnosis of alcoholism. The increase of alcohol-related ill-health is illustrated by Sri Lanka where it was reported that alcoholic Cirrhosis accounted for 24% of all Cirrhosis cases. A recent study in the U.S. shows that Cirrhosis of the liver kills at least 14,000 alcoholics a year.

Everyone is afraid of AIDS. The highest number of AIDS victims fall into two groups. The first group, gay and bisexual males, contains the majority of AIDS cases in the world, especially in the U.S.A. Of the general gay population, it is estimated that anywhere between 15 and 30 percent are chemically dependent. From this we can assume that 15–30 percent of gays and bisexuals who have AIDS are also chemically dependent. The second largest group of AIDS sufferers are intravenous drug users. It would be safe to assume that the majority of these people are chemically dependent.

Drug Overdose: One of the major physiological effects of Chemical Dependency in the U.S. is overdose of the drug alcohol. Alcohol is involved in close to 10,000 overdose deaths annually, half of those in combination with other drugs. Alcohol abuse also accounts for around 100,000 episodes of medical intervention each year.

Heart disease: High alcohol consumption has been linked to cardiomyopathy and hypertension. Long standing use of substantial quantities of alcohol has been found in the large proportion (50%) of patients with unexplained heart disease throughout the world. It is estimated that to produce cardiomyopathy, a drinker must drink an average of six drinks a day over a period of years.

Both men and women who drink three or more drinks daily tend to have hypertension.

Brain Damage: Prolonged, repetitive overindulgence in alcoholic beverages affects the brain. Continued alcohol use results in general loss of cognitive or mental abilities, specific loss of recent and remote memory. About 10% of alcoholics have chronic brain syndrome, an irreversible condition. Atrophy (loss of brain cells) is one of the major consequences of alcoholism, found in 50–100% of alcoholics.

For the 18 million Americans with serious drinking problems affecting health, life is a runaway roller coaster that, left unattended, inevitably leads to disaster. "It ruins everything that matters to you," says New York Times reporter Nan Robertson, a recovering alcoholic.

The costs of Chemical Dependency: Costs are seen in a variety of ways. Only U.S.A. has some clear statistics about this.

Some are the monetary costs of treatments, drug therapy, lost production, lost sales, cost of purchase of drugs for use and health or welfare services to help alcoholics and their families.

The economic cost of alcoholism and alcohol abuse may be as high as $120 billion annually in the U.S., a major portion of which is lost production. A recent study in the U.S. shows the following data.

Economic cost of Chemical Dependency

	Billions of Dollars
Direct	
Treatment	17.9
Crime	10.5
Motor Vehicle crashes (Property damage & Court cases)	4.5
Others (Fire, highway safety special education)	2.9
Indirect	
Reduced productivity	71.7
Premature death	14.5
Motor vehicle crashes	18.0
Victims of crime	14.0

Much of the costs of the disease, however, cannot be calculated in a dollar amount. There is no way to figure the "human" costs of broken families, disturbed children, suicides, emotional illness, misery, health deterioration or death.

There also are social costs of alcoholism. The cost of funding public treatment centres, safety services, accidents, divorces, lowered efficiency, legal entanglements and public intoxication.

Personal costs – In 1985 it was estimated that alcohol-related deaths may run as high as 10% of all deaths each year. The alcoholic's life expectancy is shortened by 15 years. The mortality rate is two and a half times greater than that of non-alcoholics. The killer number one in Germany is alcohol causing road accident. Most of these addicts are beer addicts, says WHO expert committee report.

International comparisons in 25 countries show that the United States ranks 15th in terms of total per capita consumption of alcohol. The highest consumption is found in Portugal, France and Italy.

The most recent Alcohol and Health Report prepared by the Department of Health, Education and Welfare reports the following. Approximately two-thirds of adult Americans drink, and of those who drink 10% are alcoholics. Males apparently still outnumber females as heavier drinkers. In the U.S. 40% of the women and only 25% of the men abstain from alcohol use. In major treatment centres one in four patients is a woman. The National Institute on Alcoholism and Alcohol Abuse (NIAAA) also indicates that the heaviest drinking occurs in the 21-34 year age group among men, and in the 35-49 age group for women.

Teen-agers (14-17 years old) numbering 3.95 million already show signs which may lead to alcoholism in later years. 38 million children of alcoholics, of whom 12 million are under the age 18, are at high risk of developing alcoholism in the future and most will suffer special problems even if they never become alcoholic. Alcohol-related motor vehicle accidents are the leading cause of death among young Americans aged 15-24.

❑

*•• By **Fr. George Kolath**, Director, TRADA–Total Response to Alcohol and Drug Abuse, Kottayam-686 015, Kerala.*

HAUNTED
by the persistent prying, of unnerving eyes
Angels of mercy

Colombia Turns to Heroin

Narcotics Police hack down Poppies during a raid in the remote mountains of Colombia.

Colombia is rapidly becoming one of the world's big heroin makers. The market for cocaine is saturated and despite the traffickers' effort to find new customers in Japan and Australia, more South American cocaine is now being manufactured than can profitably be smuggled. Colombia's drug gangs have begun making the switch to avoid joining the dole queue.

A pound of pure cocaine sells in Bogota for as little as the equivalent of £ 500 (approx. Rs. 22500). Good quality heroin is selling at about £20,000 (Rs. 900,000) and with Colombia's efficient and savage smuggling and enforcement networks, it is easy to go into the new criminal industry.

Although Colonel Rosso Serrano, the commander of the Police Narcotics Brigade, ended his report for the first half of 1991 with a note that several opium poppy plantations had been detected - "a situation that worries us" - he was amazed at the scale of plantations found when he took three companies of police into the mountains of the southern department of Huila. When the operation ended this week, 2,300 acres of poppy plantation had been found and destroyed, way above the figure that had been believed possible, and an indication that the switch from cocaine to heroin is already far advanced.

Plantations have been reported in several other provinces, all in the mountains that provide the wet, cold climate that makes a strong poppy, and creates safety from interference.

Poppy seeds were first brought to Colombia by Mexican traffickers in 1978, and peasants in Cauca department, already growers of marijuana and coca, produced small amounts of raw opium through the 1980s. By 1984 it was possible to buy smoking opium in the capital. Camilo Uribe, director of the Toxicology Clinic, collected samples of opium and crude morphine base from six areas of Colombia in the early 1980s.

Towards the end of the decade, as cocaine overproduction coincided with a plateau in US consumption levels, sending prices plummeting, several drugs groups turned their attention to the opiates. A poppy-grower from Tolima, in western Colombia, told me of this first attempt at applying heroin-cooking lessons learnt from a Mexican. "I bought the chemicals and started boiling down 12 kg of opium. But something went wrong and I lost it all. Now we have people who travelled to Thailand to train as cooks."

Others have linked up with a Sicilian group, based in neighbouring Venezuela. Despite several requests for the leader's extradition, and one brief arrest, the group appears to have bought itself immunity. ❑

•• Excerpts from an article by ***Timothy Ross*** *in The Independent, London.*

Drug Classification: Uses & Effects

Drugs	Other names	Duration of effects (in hours)	Physical Dependence	Psychological dependence	Usual methods of administration	Medical uses	Possible effects	Effects of overdose
I NARCOTICS OR OPIATES								
1. Opium	Dovers powder Ope, Medak, Chandu	3-6	High	High	Oral, Smoked	Analgesic Antidiarrheal	Exaggerated mood swings, Euphoria, Drowsiness Respiratory Depression Constricted Pupils Nausea	Slow and Shallow Breathing, Clammy Skin Convulsions Coma Death
2. Morphine	Pectoral Syrup	3-6	High	High	Oral, Smoked Injected	Analgesic		
3. Pethidine	Meperidine Pethadol	3-6			Oral, Injected	Analgesic		"
4. Methadone	Dolophine Methadose	12-24	High	High	Oral, Injected	Analgesic	"	"
5. Codeine		3-6	Moderate	Moderate	Oral, Injected	Analgesic	"	"
6. Heroin	Thai White Horse, Smack Brown Sugar	3-6	High	High	Injected Smoked, Sniffed	Under Investigation	"	"
7. Fortwin	Nil	3-6	High	High	Oral, Injected		"	"
8. Diazepams	Nil	3-6	High	High	Oral, Injected		"	"
II. DEPRESSANTS								
1. Barbiturates	Barbs, Downers Phenobarbital	1-16	High	High	Oral Injected	Anasthetic Sedative Hypnotic	Impaired thinking memory's judgement	Shallow respiration Cold & Clammy Skin
2. Tranquillisers (Valium, Librium)		3-6	Moderate	Moderate	Oral	To treat sleep lessness anxiety tension	Slurred Speech	
3. Methaqualone	Mandrax Mandies	4-8	High	High	Oral Injected	Sedative Hypnotic	Disorientation	Dilated pupils weak & rapid Pulse coma
4. Alcohol		1-6	High	High	Oral		Drunken behaviour	

Association of Psychological and Educational Counsellors of Asia Seventh Biennial Conference workshop Bangkok Thailand, workshop on-drug and alcohol abuse counselling July 4-8, 1988

Drug Classification: Uses & Effects (Contd)

5. Chloral Hydrate	Noctec Somnos	5-8	Moderate	Moderate	Oral	Hypnotic		
III. STIMULANTS								
1. Cocaine	Coke, Flake Snow, Toot	1-2	Possible	High	Sniffed, Smoked Injected	Local Anesthetic	Increased alertness, excitation, Euphoria, Increased pulse rate and blood pressure insomnia, loss of appetite	Agitation, increase in body temperature, Hallucinations, possible death
2. Amphetamines	Benzedrine Dexedrine Methedrine Desoxyne Speed uppers	2-4	Possible	High	Oral Injected	Hyper kinesis		
3. Nicotine	Cigarettes, Cigars Beedies, Tobacco Betel, Khat		Possible	High	Smoked Oral		Increase blood pressure, respiratory rate, heart rate	Loss of appetite, cancer of lungs mouth, throat, bronchitis
IV HALLUCINOGENS								
1. L.S.D. (Lysergic Acid Dieth Ylamide)	Acid Microdot	8-12	None	Degree unknown	Oral Injected	None	Illusions and Hallucinations, poor perception of time and distance	Psychosis, Possible death
2. P.C.P. (Phency Clidine)	Angel dust hog	Variable	Degree unknown	High	Smoked Oral Injected	Veterinary Anaesthetic		
3. Mescaline	Buttons, cactus, magic-mushroom	8-12	None	Degree unknown	Oral Injected	None		
4. Volatile Gases	Glue, Petroleum compounds							
V. CANNABIS								
1. Marijuana	Pot, grass, Thaistick, Ganja	2-4	Degree unknown	Moderate	Smoked Oral		Euphoria, relaxed inhibitions, increased appetite, disoriented behaviour	Fatigue, Paranoia, Psychosis
2. Hashish (Bhang)	Hash Charas	2-4	Degree unknown	Moderate	Smoked oral			

Source : *Association of Psychological and Educational Counsellors of Asia Seventh Biennial Workshop, Bangkok, July 1988*

Are you a Science Literate?

Check whether you understand the following terms that anyone with a good knowledge of high-school Science should recognise.

absolute zero : *lowest possible temperature, –273.15 degree Celsius; the point at which all molecular and atomic motion ceases.*

acid rain : *contains a high concentration of acidity, resulting from sulphur and nitrogen oxides emitted primarily from motor vehicles and power plants.*

amino acids : *compounds containing nitrogen, oxygen, carbon and hydrogen which, when linked, are known as proteins.*

antibody : *naturally produced protein formed by the blood in response to an invading antigen, such as a bacterium. After such exposure, the body has acquired immunity to this particular pathogen.*

antimatter : *matter identical to the ordinary variety but with an opposite electric charge. A positron is the anti-matter equivalent of an electron.*

astronomy *: study of the motion, size and other traits of heavenly bodies; distinct from astrology, a pseudoscience that believes planetary position influences events on Earth.*

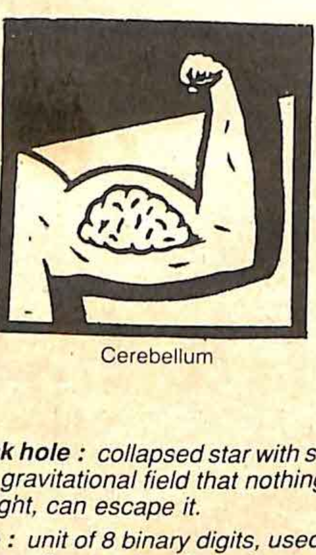
atom : *the smallest unit of matter that can take part in a chemical reaction; consists of a nucleus, which in turn is composed of one or more protons and neutrons orbited by one or more electrons.*

atomic bomb : *powered by the splitting of an atomic nucleus (nuclear fission); a thermonuclear or hydrogen bomb releases energy when atomic nuclei undergo nuclear fusion, or combination.*

bacteria : *microscopic organisms larger than viruses that replicate by splitting or forming spores and, unlike viruses, are vulnerable to antibiotics.*

big-bang theory : *the leading idea in cosmology, the study of the origin and evolution of the universe, holds that the universe began in an immense explosion of spacetime. The legacy of that bang is the expanding universe, in which everything races away from everything else like raisins in a rising tea-cake.*

biomass : *total weight of all organisms in a particular place, such as a swamp.*



Cerebellum

black hole : *collapsed star with such a strong gravitational field that nothing, not even light, can escape it.*

byte : *unit of 8 binary digits, used as a measure of computer storage capacity.*

carbon cycle : *circulation of carbon from plants that take in carbon dioxide from the air and convert it into carbohydrates (any compound made of only carbon, hydrogen and oxygen) by photo-synthesis, the process in which sunlight is changed into energy, animals eat the plants, respire and decay, returning gaseous carbon to the atmosphere,'*

cell : *the basic unit of life. Within cells,* *DNA, the molecule that encodes heredity, contains the blueprint for producing proteins, which fuel biochemical reactions and comprise the structural components of the organism.*

centigrade : *temperature scale, a.k.a. Celsius, in which water boils at 100 degrees C and freezes at zero.*

cerebellum : *part of the brain that controls muscles.*

cerebral cortex : *part of the brain that controls higher thought.*

chemical bond : *attractive force that links atoms into molecules.*

cholesterol : *fatty substance present in the body, as well as in all animal fats, blood, nervous tissue and bile; strongly linked to hardening of the arteries.*

chromosome : *a string -ike body, usually in cell nucleus. Along it are strung genes that govern heredity.*

comet : *a ball of frozen gas and dust that follows a very stretched-out orbit around the Sun.*

conductor : *any material that transmits heat, light or other energy.*

Crick and Watson : *Francis and James, British and American biologists who discovered that DNA has the shape of a double helix*

dinosaur : *a reptile that lived from about 220 to 65 million years ago, some 60 million years before the first appearance of humans.*

Doppler effect : *the change in perceived frequency of waves when either the source or receiver moves. For instance, a siren moving toward you increases its pitch, then becomes lower as it speeds away,*

$E=mc^2$: *the relationship discovered by Albert Einstein between energy (E) and mass (m) and the speed of light (c), which determines how much energy a given amount of mass can be converted into. A consequence of Einstein's theory of special relativity, it is the basis for the atomic bomb, in which splitting atoms release energy equivalent to the mass lost.*

ecological niche : *place and function of an organism in an ecosystem, such as living on the savanna and hunting gazelles.*

electromagnetic radiation : *any wave of energy generated when an electric charge such as an electron, is accelerated. Includes light, radio waves and X-rays, which differ only in their frequency.*

elementary particle : *any indivisible unit of matter, such as an electron or quark.*

entropy : *the measure of a disorder of a system. According to the laws of thermodynamics, entropy always increases in a closed system unless energy is added.*

enzyme : *protein that causes or accelerates biochemical reactions in cells.*

evolution : *the central tenet of biology, as first articulated by Charles Darwin in The Origin of Species, stating that random mutations, or changes in genes, are naturally selected, i.e., passed on to the next generation, if they improve the organisms' fitness or ability to survive and reproduce. The changes in an organism's structure or behaviour to fit new conditions are adaptations.*

fossil fuel : *any fuel derived from decayed organisms, such as oil, gas and coal.*

genetic engineering : *the altering of genes through any technique of molecular biology, such as splicing foreign DNA into a host's chromosomes; also called recombinant DNA.*

genome : *all the genes in an organism. A multibillion dollar project to determine the sequence of the human genome is underway.*

geologic fault : *a fissure in the earth, usually where tectonic plates, large masses of the earth's crust, meet. Often the site of earthquakes*

geothermal energy : *that derived from the heat of the earth, as evidenced by thermal springs and geysers.*

gravity : *one of four basic forces of nature, which moves objects toward each other. A very weak force, it was shown by Einstein to be a consequence of the shape of spacetime. In contrast, the other three basic forces of nature, the strong nuclear force, the weak nuclear force and electromagnetism, are carried by particles.*

greenhouse effect : *warming of a planet caused by an accumulation of gases that trap heat in the atmosphere.*

Heisenberg uncertainty principle : *the principle that certain qualities of an object, such as an electron, cannot be simultaneously known with perfect precision, because the act of measuring one quantity changes the other.*

Homo sapiens : *the species to which modern man belongs; arose about 200.000 years ago.*

hormone : *substance secreted by endocrine glands, which affect an organ or tissue elsewhere in the body.*

infrared : *invisible part of the electromagnetic spectrum, with waves longer than light; heat from sunlight and lamps is infrared radiation.*

ion : *any electrically charged atom or molecule.*

ionizing radiation : *high-energy radiation that knocks out electrons in molecules of material it passes through, such as human tissue, causing ions to form. The loose electrons can cause cancer.*

jet stream : *air current, moving west to each about 16 to 24 km up, that affects weather.*

Mendel : *Gregor, 1822-1884. Austrian monk and botanist who first discovered such principles of inheritance as dominant and recessive traits.*

neuron : *nerve cell, of which the human nervous system has some 10 billion.*

Occam's razor : *a guiding principle of science, stating that the simplest hypothesis accounting for the most facts is most likely to be correct.*

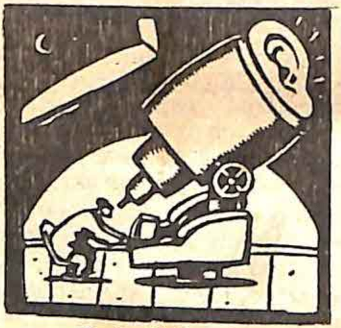
organic : *containing carbon.*

ozone layer : *a layer of ozone gas (composed of three oxygen atoms) 10 to 20 kilometres above the Earth that screens out most harmful ultraviolet radiation. Currently being damaged by chlorofluorocarbons (Freons), gases used as refrigerants and for other industrial applications.*

plasma : *a fourth state of matter (distinct from solids, liquids and gases), consisting of a gas of ions; believed to constitute 99 percent of the universe. Also, the clear liquid, noncellular component of blood.*

quasar : *starlike objects at the edge of the universe, they provide clues to its age and origin.*

radio telescope : *collects radio (as opposed to light) waves. Used to search for extraterrestrial life.*



Radio Telescope

Richterscale : *an open-ended scale indicating the severity of earthquakes, 2.0 is barely felt; 6.0 causes considerable structural damage and anything above 8.0 causes, massive destruction.*

scientific method : *identify the problem, gather pertinent data, form a working hypothesis (explanation) do experiments to test the hypothesis, interpret the result, draw a conclusion and modify hypothesis as needed.*

sex-linked trait : *characteristic carried on by either the X or Y chromosome, such as colourblindness.*

software : *set of instructions (programme) that runs a computer's hardware*

star : *gaseous celestial body, such as the Sun, located in a galaxy (collection of stars under mutual gravitational attraction) like our Milky Way.*

superconductor : *material that conducts energy without resistance.*

Z-particle : *subatomic particle that carries the weak nuclear force,, one of the four basic forces of nature.* ☐

THE UNIVERSE

Human conception of the universe (or space as it is now better known) has been changing with the passage of time.

When the universe was first conceived of as an orderly unit, it was called COSMOS, as opposed to chaos, and the studies relating to the Cosmos were known as Cosmogony or Cosmology. Today we speak of them as Space and Space Sciences.

A regular enquiry into the universe was first instituted in AD 140 by Claudius Ptolemy, a Graeco-Egyptian astronomer. He propounded the theory that the earth was the centre of the universe and that the sun and other heavenly bodies revolved around it. There have been several theories since that, the more important of which are given below:

In 1543, Polish astronomer Copernicus argued that the Sun, and not the Earth, was the centre of the universe. Though the Copernican theory changed the centre of the universe it did not change its extent. The Copernican universe was still equated with the Solar System. It took another three and a half centuries before our ideas changed further.

By 1805 telescopic studies made by the British astronomer Herschel, made it clear that the universe was not confined to the solar system. The solar system itself was only a part of a much vaster star system called the galaxy. The universe thus became quite extensive comprising millions of stars scattered about the Milky Way. But our vision of the universe did not end there.

As the 20th century opened, it seemed that the Milky Way galaxy with its cluster of over a hundred billion stars together with their attendant satellites the Magellanic clouds, actually represented all there was to the universe. In 1925 the American astronomer Edwin P. Hubble (1889-1953) pointed out that there were other galaxies in the universe and that the universe actually consisted of millions of galaxies like the Milky Way. In 1929 Hubble proved that these galaxies are flying away from each other and that the farther they are, the faster they fly. This meant that the universe is expanding like a balloon that is being blown up.

The movement of a star or a galaxy affects its light as seen by an observer. If the star is moving towards the observer, its light will be shifted towards the blue end of the spectrum. If the star or galaxy is moving away from the observer its light will be shifted to the red end of the spectrum. This is known as the Doppler Effect or Shift. The Doppler shifts of galaxies show that they are receding and that the universe is in a state of rapid expansion.

Modern theories of the universe are based on this flight of galaxies, that is, on the assumption that matter is in a state of rapid expansion.

It is generally assumed that our universe started out as a superdense ball. It is argued that if the universe is now expanding (as Hubble has shown) it must have been, once upon a time, in a state of high compression. High compression means high density. We have, at present, no means of knowing how high the density of the original universe was.

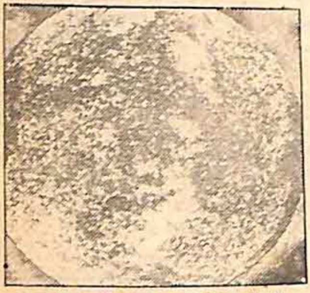
Abbe Georges Lemaitre, a Belgian astronomer-priest, explained this process of expansion in what is known as the big bang theory. He argued that billions of years ago, cosmic matter (universe) was in an extremely compressed state, from which expansion started by a primordial explosion. This explosion broke up the superdense ball and cast its fragments far out into space, where they are still travelling at thousands of kilometres per second. It is from these speeding fragments of matter that our galaxies have been formed. The formation of galaxies and stars has not halted the speed of expansion. And, as it happens in all explosions, the farthest pieces are flying the fastest.

The primordial explosion is the hallmark

UNIVERSE: WHAT WE KNOW

SUN

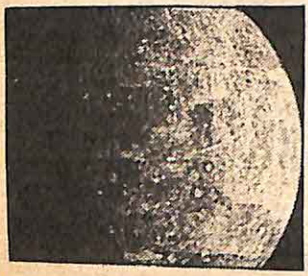
Diameter: 1,384,000 km (865,000 miles).
Age: 4.5 billion years.
Satellites: 9 planets.
A rather ordinary, middle-age star, the gaseous sun may reach a temperature of 27 million degrees celsius at its core. Its 11-year cycle is now approaching a solar maximum, a period marked by frequent sunspots and flares. On Earth, some radio waves will be disturbed and the amazing sky streamers called Northern Lights will appear.

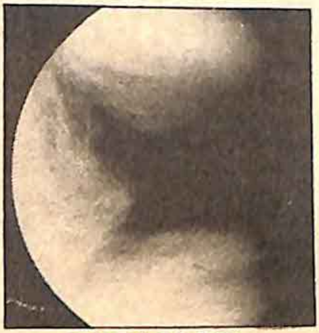


MERCURY

Diameter: 4,849.6 km (3,031 miles).
Moons: none.
Average distance to the sun: 57.6 million km (36 million miles).
Time to orbit the sun: 88 days.

Tiny Mercury, just larger than Earth's moon, races along its elliptical orbit at 176,000 km (110,000 miles) per hour – a speed that keeps it from being drawn into the sun's gravity field. The cratered planet has no atmosphere; its days are scorching hot and its nights are frigid.





VENUS

Diameter: 12,032 km (7,520 miles).
Moons: none.
Average distance to the sun: 107.52 million km (67.2 million miles).
Time to orbit the sun: 225 days.
Earth's twin in size and mass, searingly hot Venus is perpetually veiled behind reflective sulphuric-acid clouds. Probes and radar mapping have pierced the clouds and carbon-dioxide environment to reveal flat, rocky plains and signs of volcanic activity.

EARTH

Diameter: 12,739.2 km (7,962 miles).
Moons: 1.
Average distance to the sun: 148.8 million km (93 million miles).
Time to orbit the sun: 365 days.
Uniquely moderate temperature and the presence of Oxygen and copious water make Earth the only planet in the solar system to support life. But as we despoil the surface and atmosphere, we run the risk of becoming the galaxy's most self-destructive creatures.

MARS

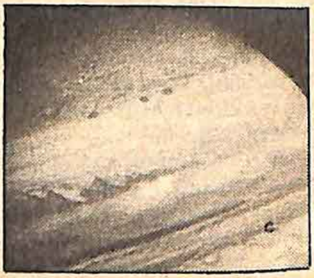
Diameter: 6,755.2 km (4,222 miles).
Moons: 2.
Average distance to the Sun: 225.6 million km (141 million miles).
Time to orbit the sun: 687 days.

The Viking probes failed to find any sign of life. Beneath its thin atmosphere, Mars is a barren place, covered with pink soil and boulders. Long ago it was more active: the surface is marked with dormant volcanoes and deep chasms where water once freely flowed.

JUPITER

Diameter: 141,968 km (88,730 miles).
Moons: 16.
Average distance to the sun: 772.8 million km (483 million miles).
Time to orbit the sun: 11.9 years.

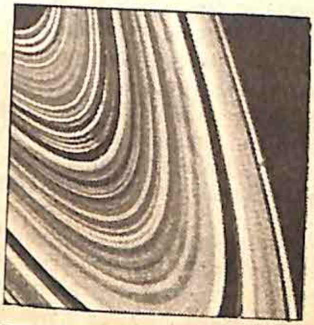
Two Pioneer space probes photographed the Great Red Spot on the solar system's largest planet. Voyagers 1 and 2 later showed it is an enormous eddy in the turbulent cloud cover. They also spotted dusty rings, three new moons and volcanoes on the moon Io.

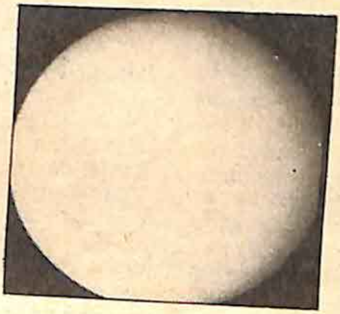


SATURN

Diameter: 119,296 km (74,560 miles).
Moons: 20 or more.
Average distance to the sun: 1,417.6 million km (886 million miles).
Time to the orbit the sun: 29.5 years.

Voyager 1 found that the celebrated rings of the golden giant Saturn are composed of thousands of rippling, spiralling bands just 100 feet thick. The moon Titan has a nitrogen atmosphere and hydrocarbons – the necessities of life – but no signs of Titanites.





URANUS

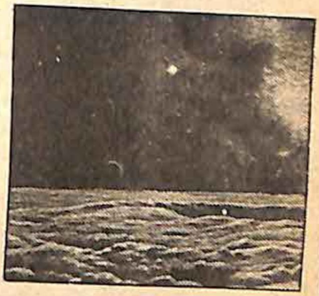
Diameter: 52,096 km (32,560 miles).
Moons: 15.
Average distance to the sun: 2,852.8 million km (1,783 million miles).
Time to orbit the sun: 84 years.

Watery Uranus is the only planet that lies on its side. One pole, then the other, faces the sun as it orbits. Voyager-2 found nine dark, compact rings around the planet and a corkscrew-shape magnetic field that stretches for millions of miles.

PLUTO

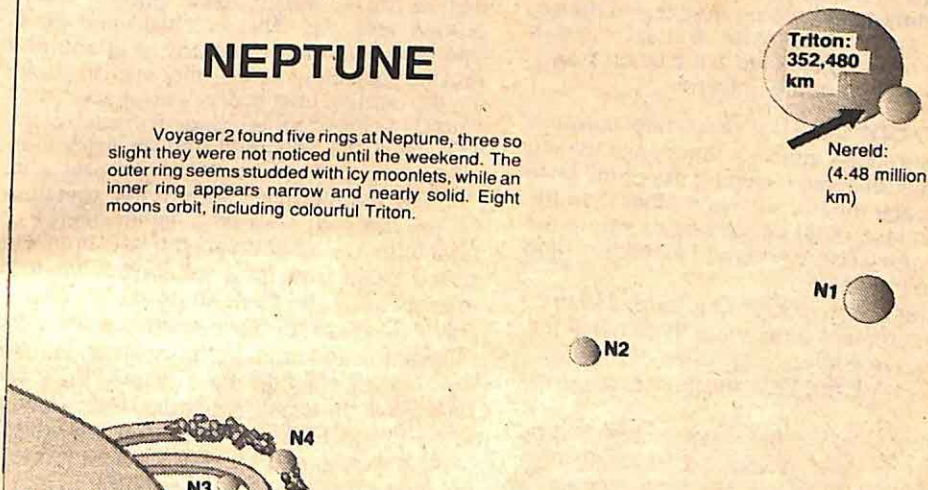
Diameter: 3,040 km (1,900 miles).
Moons: 1.
Average distance to the sun: 5,865.6 million km (3,666 million miles).
Time to orbit the sun: 248 years.

The smallest planet, Pluto remains mysterious, but is likely a frozen snowball of water and methane. It follows the most elongated and tilted orbit in the solar system. Pluto's moon, Charon, is nearly half its size, giving the impression of a double planet.



NEPTUNE

Voyager 2 found five rings at Neptune, three so slight they were not noticed until the weekend. The outer ring seems studded with icy moonlets, while an inner ring appears narrow and nearly solid. Eight moons orbit, including colourful Triton.



of the big-bang theory. It also differs from other theories in two important respects.

The continuous creation theory originally advanced by two astronomers, Thomas Gold and Hermann Bondi, has since received support from the British astronomer Fred Hoyle. According to this theory galaxies recede from one another but their spatial density remains constant. That is to say, as old galaxies move apart new galaxies are being formed in the vacancies. These new galaxies are formed from new matter which is being continuously created to replace old matter that is being dispersed.

According to the Pulsating (Oscillating) Universe theory, advocated among others by Dr. Alan Sandage, the universe expands and contracts alternately between periods running into tens of billions of years. Dr. Sandage thinks that some 12 billion years ago a great explosion occurred in the universe and that the universe has been expanding ever since. It is likely to go on expanding for 29 billion years more, when gravitation will halt further expansion. From then on, all matter will begin to contract or collapse upon itself in a process known as 'implosion'. This will go on for 41 billion years compressing matter into an extremely superdense state and then it will explode once again. This is the latest theory of the evolution of the universe.

Outer Space: The difference between space and outer space is that space means the whole universe including the earth while outer space means all space other than the earth. In fact, outer space begins where the earth's atmosphere ends and extends on and on in all directions.

Outer space is vast. Our terrestrial units of measurement hardly suit its dimensions. So we have evolved new units of measurement like the *Light Year* and the *Astronomical Unit.*

A Light Year is the distance covered by light in one year in vacuum travelling at a speed of 299,792.5 km* per second or about 186,282 miles per second. A light year is thus 5.88 million-million miles.

Astronomical Unit represents the mean distance between the sun and the earth, calcultated on the data supplied by radars. This distance–the Astronomical Unit–has now become a key constant in determining distances in the solar system.

A.U. in terrestrial measurements is approximately 93 million (92,857,000) miles or 150 million (149,600,000) km. In terms of space dimensions we may say that a Light Year is made up of about 60,000 A.U.s.

Light and sound are the two principal media through which we gather our impressions of the external world. Light is something we can see (visible) and sound is something we can hear (audible). This was considered an axiomatic truth till the end of the 18th century. As the 19th century broke, this simple belief was shattered. Astronomers and physicists learned that there are invisible lights and inaudible sounds. The first break came in 1800 when the British astronomer William Herschel (1738-1822) discovered infra-red radiation.

When sunlight (white light) is passed through a prism, it is broken up into rays of different colours, like those of the rainbow. Traditionally, seven colours are known, which are epitomised by the acronym VIBGYOR, that is, *violet, indigo, blue, green, yellow, orange* and *red.* This is called the Solar Spectrum, with the violet colour at one end and the red colour at the other end. In studying the heating effects of the solar spectrum, Herschel placed a thermometer in each of the colours of the spectrum and an extra thermometer outside the spectrum at the red end.

The thermometer outside the spectrum (at the red end) showed a higher degree of heat than any other inside the spectrum. He called these rays *infra-red* (below the red) rays. In 1801 the German physicist Johann Ritter (1776-1810) discovered that the rays outside the spectrum at the violet end broke down silver chloride more quickly than the rays within the visible spectrum. These came to be called *ultra-violet* (beyond the violet) rays. It thus turned out that sunlight formed not only a visible spectrum but also an invisible one.

In 1803 Thomas Young (1773-1829), a British physicist, showed that light travelled in tiny waves of varying wavelengths. The wave lengths were too small to be measured by conventional scales. So Anders Angstrom

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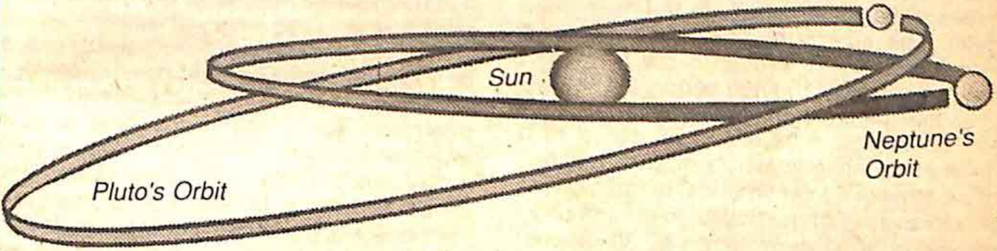
* This velocity was accepted as one of the Astronomical Constants by the International Astronomic Union in 1968.

Which is the Farthest, Neptune or Pluto?



For most of its orbit, the tiny planet Pluto revolves farther from the sun than any of the other eight planets, including Neptune. But Pluto's path is highly elliptical, or stretched out; at its closest approach to the sun, it is 4.4 billion kilometres away, but at its farthest approach it is fully 7.3 billion kilometres distant.

As a result of Pluto's eccentric habits, Neptune claims the title of "farthest plant" whenever Pluto's path crosses inside Neptune's. That's the current situation: since 1979 (and lasting until 1999) Neptune has been the most distant planet. Then it will be Pluto's turn again, and for the next 228 years Neptune will revert to its usual position as the eighth planet from the sun.

(1814-1874), a Swedish physicist, evolved a new scale to measure wavelengths. He chose a unit equal to ten billionth of a metre. This has since become known as the *Angstrom Unit.* Ten *Angstroms* are equal to a *millimicrometre* (a thousandth of a millionth of a metre) which in terms of modern SI units is equal to a *nanometre.*

The invisible ultra-violet and infra-red radiations remained inexplicable till James Clerk Maxwell (1831-1879), the British physicist, came out with his *Electro-magnetic thesis* in 1870. Maxwell argued that electricity and magnetism were different aspects of a single electro-magnetic field.

The Maxwellian theory was vindicated when the German physicist Heinrich Hertz (1857-1895) produced electro-magnetic radiations with wavelengths much longer than that of infra-red rays. These radiations were at first called Hertzian waves but eventually came to be known as radio waves. Then in 1895, another German physicist Wilhelm Rontgen (1845-1923) discovered what he called X-ray radiation. The X-ray was later found to be much shorter in wavelength than the ultra-violet rays.

In 1896, the French physicist Henri Becquerel (1852-1905) discovered the phenomenon of *radio-activity. Becquerel did not at that time know* why or in what manner this radio-activity took place. Subsequently it was found that this radio activity was caused by the atoms of the heavy metal *uranium* giving off a constant emission of radiation and particles. It was further shown that this radio-activity was also electro-magnetic in nature. Rutherford named it the *gamma ray*. The gamma ray had a wavelength even shorter than that of the X-ray.

In 1905 Einstein showed that all forms of radiation travelled in wave packets, which acted like particles in some ways. He called these packets *Photons*. The energy of the photons increases as the wavelength decreases. The wavelength is related to frequency, that is to say, the number of vibrations or waves or cycles per second. The shorter the wavelength, the higher is the frequency and the greater the energy. Thus gamma rays with the shortest wavelength (below 0.01 nanometre) are the most energetic. The energy decreases as the wave length increases, through X-ray (1 to 0.01 nm), ultra-violet (1 to 400 nanos) visible light in all the colours of the spectrum (400 nanos to 700 nanos) infra-red (700 nanos to 1 millimetre), micro waves (1 millimetre to 500 millimetres or 50 centimetres) to radio waves which have the longest wavelengths (50 centimetres to 3000 centimetres or 30 metres) and the lowest energy content.

Every object which is at a temperature above *Absolute Zero* (–273.16°C) radiates photons of all kinds. The average energy of the photons emitted increases with the temperature. We experience this heat during the peak period (noon) in visible light radiation. But even objects which are not hot enough to glow like the sun still radiate quantities of infra-red radiation, for instance, our own bodies.

Radio waves are the radiations with the longest wavelengths, that is from 50 centimetres to as much as 30 metres. Objects in outer space that emit such radiations are called *radio sources.*

Astronomy: Modern astronomy began with the Italian astronomer Galileo. In 1609 Galileo heard of the telescope made by the Dutchman Hans Lippershey. He improved upon it and constructed a similar instrument that could magnify upto thirty diameters.

It was this instrument, which was a *refractor telescope*, that opened up the field of optical astronomy. Galileo made several startling discoveries. He found that the Moon's surface is rugged, and that Pleiades is a group of over 40 stars. He discovered four of Jupiter's moons and observed the sunspots.

In 1668 Newton invented a new instrument, the *reflector telescope*. In a refractor telescope, light is gathered by a large objective lens. In a reflector telescope a large curved mirror is used for this purpose. Both these types of optical telescopes are still in use.

The invention of the optical telescope was an epoch-making event in the history of astronomy. The instrument so caught the fancy of the astronomer and the layman alike, that all advanced countries vied with one another in building bigger and bigger telescopes.

Radio Astronomy came into being in the most unexpected manner. In 1931, Karl Jansky, an American radio engineer working in Bell Telephone Laboratory, noticed a steady stream of radiation coming in from outer space. It is strange that professional astronomers of the time paid little attention to this discovery. However, it attracted the attention of an amateur radio operator in the U.S., Grote Reber, who set out by himself to learn more about this extraterrestrial phenomenon. He worked single handed for nearly ten years, studying the sky and analysing radiations. In 1937, he built the world's first *radio telescope*—a 31 feet 5 inches (9.58 m) parabolic dish—and set it up in his backyard at Wheaton, Illinois. In 1940 he produced a radio map of the sky, the first of its kind in the world. Thus a new branch of astronomy was opened–Radio Astronomy.

The radio telescope is in many ways analogous with the optical telescope. It consists of a large metal reflector fitted with an antenna. The metal reflector collects and focuses radio energy on the antenna which can be tuned to any desired frequency. A sensitive radio receiver picks up the radiation from the antenna and records it. This is analysed in a computer and studied.

In the sixties satellite technology took astronomical investigations farther afield. Until then astronomical studies were entirely ground-based. Now satellites have made it possible to study astral phenomena from above the atmosphere. Thus astronomy is studied from two levels—from the ground and from above the atmosphere. This has led to the emergence of many specialised fields in astronomy—X-ray, ultra-violet, Gamma ray and infra-red.

Radar astronomy was born in 1940, when a Hungarian physicist Zoltan Bay sent out a beam of micro waves to the moon and detected the echo. It is really a part of radio astronomy since micro waves can rightly be considered a part of the electromagnetic spectrum.

A new generation of "super telescopes" designed for mountaintops around the world ushered in a golden age of astronomy by the early nineties.

Large Radio Telescopes

Location	Description	Approximate Effective Area in sq m	In operation since
Jodrell Bank, Manchester, UK	Dia. 76 m Parabolic dish	3.0×10^3	1957
Green Bank, West Virginia, USA	Dia. 92 m Parabolic dish	4.5×10^3	1962
Parkes, Australia	Dia. 64 m Parabolic dish	2.3×10^3	1962
Arecibo, Puerto Rico	Dia. 300 m Spherical dish	3.0×10^4	1964
Green Bank, West Virginia, USA	Dia. 42 m Parabolic dish	1.0×10^3	1965
Lake Traverse, Ontario, Canada	Dia. 46 m Parabolic dish	1.1×10^3	1966
Udagamandalam, India	530 m NS×30 m EW Parabolic Cylinder	8.0×10^3	1970
Effelsburg, West Germany	Dia. 100 m Parabolic dish	5.5×10^3	1972
Zelenchukskaya, North Caucasus, USSR	Ratan 600, 895 panels mounted on a circle of dia 576 m.	1.4×10^3	1974

Galaxies: Galaxies are huge congregations of stars that hold together by force of gravity. They are so big that they have sometimes been called 'island universes'. Galaxies seem to be scattered in space. But there are many clustered into groups.

When the expanding material of the universe broke up in the first instance, billions of islands of gaseous matter were formed in space. These gaseous islands or *Proto-galaxies* rotated, each with its own speed of rotation. Those with very low rotational speeds assumed nearly spherical shapes. Others assumed elliptical forms with varying degrees of elongation, depending on their rotational speeds. Most of these gaseous islands, however had such high rotational speeds that their bodies were flattened out into the shape of discs, from whose edges spiral arms streamed.

The centre of the galactic disc was formed by a multitude of proto-stars rotating on regular circular orbits around the centre of the galaxy, whereas the spiral arms were formed by highly diluted, dusty gas streamers which were caught in the general rotation and were twisted into the shape of spirals. The galaxies have thus come out in different shapes and sizes.

A structural analysis of the known galaxies brings out three major forms—Spiral, Elliptical, and Irregular. Spiral galaxies have a central nucleus with great spiral arms trailing round it. The Milky Way and the Andromeda Galaxy belong to this group. A special type of spiral galaxies is what are called barred spirals which have a central bar as a nucleus. The spirals comprise some 80 per cent of the galaxies so far known. Elliptical galaxies show purely elliptical shape without any spiral arms. They range in shape from spherical ellipticals to extremely saucer-shaped ones and account for about 17 per cent of the known galaxies. Irregulars, as the name suggests, show no definite geometric pattern or shape.

The Milky Way: The Milky Way is our home galaxy. A peculiar feature of this galaxy is a bright band of light that runs almost in a perfect circle through it. Milky Way belongs to a cluster of some 24 galaxies called 'the local group'.

As seen from the earth this band looks like a river of light flowing through the sky. Actually it is made up of millions of scintillating stars which from the distance seem to be placed in close proximity to one another. Modern westerners have called this river of light the Milky Way. The name is now applied to the galaxy as a whole.

The Milky Way had so fascinated our ancestors among all nations that they gave it pretty names and wove fanciful legends about it. The Yakuts of Central Asia called it 'the footprints of God' and the Eskimos 'the path of white ashes'. The ancient Greeks called it 'the road to the palace of the Heavens', the Chinese, 'the celestial river' and the Hebrews, 'the river of light'. The ancient Indians, not to be outdone called it 'the Akash Ganga' or 'the Celestial Ganges'.

Legend has it that in response to the insistent prayers of a devotee, Bhagiratha, God Siva brought the Akash Ganga down and allowed a trickle of it to fall on the Earth. This trickle formed the earthly Ganga (River Ganges), which thus remains even today, sacred to Hindus all over the world.

The Milky Way is a spiral galaxy. The main body of the galaxy is a disc 100,000 light years across with a globular nucleus of about 16,000 light years in diameter and far-stretching spiral arms (in one of which our solar system is located). The galaxy consists of over a hundred billion stars rotating about the centre in a stately average period of some 230 million years.

Our galactic nucleus is about 32,000 light years from the Sun. It appears to be a rotating disc of gas. In this rotating disc massive activities are going on. One such scene of activity is very near the centre of the galaxy. Here, new stars are being born continually. The area is already crowded with full grown stars. The stellar density here is of the order of a million stars per cubic parsec (3.26 light years).

Stars: Stars account for 98 per cent of the matter in a galaxy. The rest 2 per cent consists of interstellar or galactic gas and dust in a very attenuated form. The normal gas-density between stars (interstellar gas) throughout the galaxy, is about one-tenth of a hydrogen atom per cubic centimetre (cm^3) volume.

Stars tend to form groups. Lone stars going on their own are the exception rather than the rule in the universe. Single stars do not number more than 25 per cent of the stellar population. Double stars account for some 33 per cent.. The rest are multiple stars. Antares in Scorpio is actually two stars. Capella and Alpha Centauri comprise three stars each, while Castor consists of six stars.

Stars which appear single to the naked eye are sometimes found to be double stars or binaries in the telescope. These are two stars revolving around a common centre of gravity. They are found in orbital motion round each other, in periods varying from about one year to many thousands of years.

When the hydrogen in a star is depleted, its outer regions swell and redden. This is the first sign of age. Such stars are called Red Giants. Our star, the Sun, is expected to turn into a red star of this type in another 5 billion years.

Red Giants are appropriately named. They have gigantic dimensions. Betelgeuse, for example, has an actual diameter of 480,000,000 kilometres, about 350 times the diameter of the sun. Mira, another red giant, has a diameter of 640,000,000 kilometres.

Variable stars are stars that show varying degrees of luminosity. *Delta Cephei*, the first of this type of stars, was noticed in 1784 by the deaf and dumb English astronomer John Goodriche. He found that Delta Cephei had a regular fluctuation of brightness every 5 days and 9 hours. Stars of fluctuating luminosity, thus came to be called *Cepheid Variables*. In stars of this type, high luminosity fluctuates between periods as small as a few hours to as long as 1000 days or more. Generally speaking, the slower the bright-dull-bright cycle, the higher is the luminosity.

Novae and Supernovae are stars, whose brightness increases suddenly by 10 to 20 magnitudes or more and then fades gradually into normal brightness. The distinction between the two types has not been precisely explained. It would appear that they differ in degree and not in kind. The sudden increase in brightness is attributed to a partial or outright explosion. In novae, it seems that only the outer shell explodes, whereas in supernovae the entire star explodes. Novae occur more frequently than supernovae. As Prof. C. F. Powell puts it, "The whole structure of the star is blown to pieces, it flares up in brilliance so that its intrinsic luminosity for the first thirty days following the explosion is equal to about 1000 million of our suns."

THE SOLAR SYSTEM

The solar system is centred in the Sun. The Sun is the head of a family of 9 planets – *Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune* and *Pluto* —, not less than 63 satellites accompanying the planets, hundreds of asteroids and thousands of comets.

The Solar system is tucked away in a corner of the Milky Way at a distance of about 30,000 to 33,000 light years from the centre of the galaxy.

The solar system originated in a primitive solar nebula–a rotating disc of gas and dust. It is from this rotating disc that the planets and the rest of the solar system evolved.

The term *planets* is dervied from the Greek word *planetes,* meaning wanderers. Unlike the stars, which are visible in their fixed position in the sky always, the planets shift their positions and sometimes even disappear from view. Therefore they came to be called planets or wanderers. The first known planets were named after the Roman gods–*Mercury, Venus, Mars, Jupiter* and *Saturn.* The other planets, when they were discovered later, were also named according to the old pattern–*Uranus, Neptune* and *Pluto.*

The planets are divided into the inner planets and the outer planets. The inner planets are Mercury, Venus, Earth and Mars. The Earth is the largest of the inner planets and the densest of all planets. All the inner planets are dense rocky bodies and are collectively called terrestrial planets, because they resemble the Earth.

The outer planets, Jupiter, Saturn, Uranus and Neptune are very big, with large satellite families. They are composed mostly of such elements as hydrogen and helium. These planets are called Jovian, after Jove, the Greek name for Jupiter, because they resemble Jupiter in many things. All of them rotate furiously, wear dense atmospheres and consist of far lighter elements than the earth-like or terrestrial inner planets.

The outermost planet Pluto is in a class by itself. It is supposed to be a dense planet like the inner planets, although it is the farthest of the outer planets.

Rotating on their own axes, the planets revolve round the sun in long elliptical orbits.

The Sun: The Sun is one of the stars in the Milky Way. Modern estimates place the Sun at a distance of about 32,000 light years from the centre of the galaxy. The Sun and the neighbouring stars generally move in almost circular orbits around the galactic centre at an average speed of about 250 km per second.

The Sun at this rate takes 250 million years to complete one revolution round the centre. This period is now called a *cosmic year.*

Like all other stars, the Sun is composed mainly of hydrogen. Its energy is generated by nuclear collisions in its interior. It is calculated that the sun consumes about a trillion pounds of hydrogen every second. At this rate, it is expected to burn out its stock of hydrogen in about 5 billion years and turn into a red giant. The prospect is frightening.

When the sun turns into a red giant,it will have swelled a hundred times in diameter and increased a thousand times in brightness–bright red. It will then occupy about 25 per cent of the horizon. The nearest planets, Mercury and Venus, will melt. The oceans of the earth will evaporate and disappear. The earth will remain a barren rock, heated to the melting point of lead. All life on earth will cease. The Sun will survive as a red giant, for about a hundred million years more, slowly dissipating its enlarged outer shell leaving a tiny core. This core will be a faint, white dwarf-sun no larger than the present planet Mars. Around this tiny star, the burnt-out earth will continue to revolve.

The glowing surface of the sun, which we see, is called *Photosphere.* Above the photosphere is the *Chromosphere,* so called because of its reddish colour. Beyond this layer is the magnificent *Corona* of the sun which is visible during eclipses.

Between the chromosphere and the corona, spectroscopic investigations have identified a distinct, very narrow boundary zone known as the transition region. The temperature of the photosphere is about 6000°C., that of the chromosphere about 32 400°C., that of the transition region about 324 000°C., and that of the corona, which extends far into space, about 2,700,000°C, hot enough to emit X-rays. (The density of the gas in each layer decreases with increasing altitude, just as the earth's atmosphere thins with height. The corona, accordingly, is the least dense of the Sun's layers).

At the core of the sun where thermonuclear reactions take place the temperature is around 15 million degrees K. The density at the core is estimated at a hundred times that of water. Outside the core is the convection zone. Here, like boiling water in a kettle, turbulent motions of gases transport the energy that is generated in the core towards the photosphere.

The visible white light of the corona is made up of a continuum of colours, such as violet, indigo, blue, green, yellow, orange and red. Super-imposed on this continuum are hundreds of dark lines called the *Fraunhofer lines.* Each line indicates some element present in the solar atmosphere. The intensity and width of the lines reveal the temperature and density of the element.

The sun is constantly emitting streams of its substance (mainly hydrogen) as protons (nuclei of hydrogen atoms) in all directions. Sometimes these emissions are massive. They are then seen as *prominences* which send huge bouts of incandescent material upward from the sun's surface. Sometimes these eruptions roll out of the atmosphere of the sun for many miles, when they are seen as solar *flares.* The solar flares are spectacular — hot ionised gas rolling out as enormous clouds, 20 to 40 times the size of the earth at speeds of around 100 km per second through corona, the outer layer of the sun's atmosphere. Some of the most spectacular solar flares seen in recent years occurred on Feb. 28, 1942, Nov. 19, 1949 and Dec. 13, 1971.

A less spectacular but persistent stream of protons is blowing out of the corona and sweeping over the whole solar system. In 1958, the American physicist, Eugene Norman Parker, called this outward stream of protons the *solar wind.* Recent researches using satellites have shown that the solar wind is made up of a plasma, that is, ionised gas, mostly hydrogen and helium, containing nearly an equal number of protons and electrons. It flows outward from the Sun at supersonic speeds, around 400 m a second. Apparently, this wind sweeps through the whole solar system to a distance of 40 AUs from the Sun which coincides with the very limits of the planetary orbits.

Owing to the sun's rotation, the solar wind travels in spirals and carries with it magnetic fields. The Earth's magnetic field—the magnetosphere—acts as a shield against the ever-blowing solar wind and deflects it away from the earth. Nevertheless, particles of solar wind sometimes pierce the magnetic shield and enter the upper atmosphere, where, like the solar flares, they cause auroral displays.

The solar wind distorts the shape of the magnetosphere. The magnetosphere extends to a distance of 64,000 km above the earth—10 times the radius of the earth. On the part of the earth exposed to the sun (the sunlit side), the solar wind sweeps along the magnetosphere past the earth. On the other side of the earth (the night side), the solar wind converges again and compresses the magnetic field into a plume or tail, more or less like what it does to comets. The tail thus formed extends to over six million km on the night side of the earth. The particles of the solar wind and also those from the deep space are trapped in the tail and travel back and forth endlessly.

Sunspots are dark patches noticed on the surface of the sun. They appear dark because they are cooler (around 1500°C) than the surface of the sun which has a temperature of about 6000°C. The largest spot ever measured (April, 1974) covered 18,130 million sq kilometres or approximately 0.7 per cent of the sun's visible surface. The life periods of these spots also vary. They may last from a few hours to many weeks.

Plolar Auroras are two auroras, the Aurora Borealis or Northern Lights and the Aurora Australis or Southern Lights. These are lights that sweep across the sky in waves or streamers or folds. They are very often multi-coloured and provide one of the finest spectacles in nature. They occur in the Arctic and the Antarctic regions respectively. But the Northern Lights can be seen as far south as New Orleans in America and the Southern Lights as far north as Australia.

The magnetosphere is the earth's magnetic shield. It was at first called the *Van Allen Belts* after the American physicist, James Van Allen who discovered them in 1959. Van Allen in analysing the data from the earlier Explorer and Pioneer rockets found two belts of high intensity radiation in the upper atmosphere. Pioneer 12 later showed that these belts were a part of a large band of radiation called the magnetosphere. It extended far out to about 64,000 kilometres from the earth's surface.

Solar Statistics

* Distance from the Earth	149.8 million km
Absolute Visual Magnitude	4.75
Diameter	1 392 000 km
Core Temperature	15 000 000 K
Photosphere Temp.	5770 K
Rotation as seen from the Earth	25.38 days (at the Equator) 33 days (near the poles)
Chemical Composition	Hydrogen 71% Helium 26.5% Other Elements 2.5%
Age	About 5 billion years
Expected lifetime of a normal star.	About 10 billion years

The Moon: The Moon is the only satellite of the Earth. But it is a satellite of distinction. For, it is the only satellite in the solar system far too big to be a satellite. All other satellites have sizes below 1|8 the size of mother planets. But the moon is about 1|4 the size of its mother planet, the Earth.

The Moon has a diameter of 3475 km as against the Earth's 12,700 km. But it has a surface less than half that of the Atlantic Ocean. Therefore its gravitational pull is about one-sixth of the Earth's. Because the orbit of the Moon round the Earth is not circular but elliptical, the maximum distance (apogee) which the Moon may keep from the Earth is 406,000 km and the minimum distance (perigee) 364,000 km. The Moon revolves round the Earth in $27^{1/3}$ days (27 days 7 hours 43 minutes and 11.47 seconds) and rotates on its own axis in exactly the same time. This is why we see only one side of the Moon.

To our unaided vision the near side (front side) of the Moon seems to be made up of bright and dark patches. The bright parts are the mountains and highlands that catch the Sun's rays, while the darker patches are low-lying plains. These were once thought to be seas (marias) and named accordingly, though the Moon is devoid of water. The craters are depressions caused by the onslaught of meteors. They vary in size. As if to make up for lack of oceans such as we have on the Earth, the Moon has raised high sharp-peaked mountains, many of them rising to 6000 m. The highest of these are Liebnitz Mountains, near the Moon's south pole, which rise to 10,660 m–higher than Mount Everest.

The Moon has no atmosphere, as its gravitational power is too weak to hold down gases. This causes many strange phenomena. There is no twilight, the day dawns suddenly, as there is no atmosphere to be lit up before the Sun comes over the horizon. There is no sound either, as sound is a vibration transmitted through air.

Temperature on the Moon reaches extremes. During daytime the temperature rises to 100°C, at night it comes down to minus 180°C.

The Moon along with the Sun is responsible for the tides. The Moon, being nearer to the Earth than the Sun, exerts a greater influ-

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** The mean distance from the Earth to the Sun (150 million km) translated into flying hours means that a jet aircract capable of 1000 km/hr would need more than 17 years of non-stop flying time to reach the Sun.*

ence on the tides. It takes only 1.3 seconds for moonlight to reach the Earth, whereas sunlight takes as much as 8 minutes 16.6 seconds to reach us. This being so, the ratio of lunar and solar power for tide-raising is 11 to 5.

Apollo XI which landed two men on the Moon in July 1969 blazed a new trail in man's exploration of space. It has enabled man to step on to the surface of the Moon–a possibility that the wildest legends of early times had discounted. USA has followed up this initial success by Apollo XII, Apollo XIV, XV, XVI and XVII.

USSR sent up the unmanned Luna 16 (Sept. 12, 1970) and Luna 17 (Nov. 19, 1970). Luna 16 picked up Moon soil samples and returned to the Earth on September 24, 1970. Luna 17 carried the Moon buggy Lunokhod 1, which roved the surface of the Moon. It was an eight-wheeled vehicle which carried apparatus to study the lunar surface and radioed back the results to the Earth.

All these landings on the Moon and the investigations of the unmanned spacecraft like the Lunas, haven't solved the lunar puzzles. The question of the origin of the Moon and whether it is a daughter, sister or spouse of the Earth still remain unsettled.

However, the oldest rocks and soil samples brought back by the Apollo astronauts have shown that the Moon is about the same age as the Earth and was formed about 4,600 million years ago.

The most striking aspect of the Moon's appearance is the abundance of craters on its surface. They range in size from circular basins 1000 kilometres (about 620 miles) in diameter down to craters measuring less than a few metres across. The majority of these craters have been produced by a continuous rain of meteorites over the eons.

The first landing sites (Apollo 11 and 12) were marias. The rocks from these areas turned out to be basaltic lava, similar to volcanic rocks found on the Earth.

A surprising finding was the occurrence of a high percentage of titanium. While terrestrial igneous rocks contained only about 1 per cent of titanium, the lunar rocks showed 10 times as much. A few minerals unknown on earth were found in the mare basalts. Among these is *Armalcolite,* a new name derived from the names of the astronauts–*Armstrong, Aldrin* and *Collins* and the name of the area *Tranquillititis.*

The lunar rocks were bone-dry, with no trace of water in any form. Neither did they contain any trace of any organic matter. So also, volatile elements (elements with low boiling points) like Sodium, Potassium, Chlorine, Germanium, Lead and Mercury were practically non-existent. The depletion of Sodium and Potassium is significant, because these two are among the most abundant elements found in terrestrial rocks.

SPACE EXPLORATION

Space exploration is almost three decades old now. It started with Russia's 'Sputnik' and America's 'Explorer.' Man reached Moon in 1969 to walk on lunar soil. Then came the Space Stations called the 'Skylab' and the 'Salyut.' Man learned to walk in space without tethers and to retrieve and repair lost satellites.

The latest is the US craft Voyager's 12-year odyssey to Neptune which in 1989 brought out startling discoveries about planets and their moons.

Space travel has opened up a new dimension in man's study of the Universe. Astronomers can now photograph in close-up the Moon and planets, which 20 years ago they could only see dimly through the dense blanket of the Earth's atmosphere. Even though observatories have been established on mountains 2,000 m (6,600 ft) or more in height astronomers on Earth are still hampered by the blurring and filtering effect of the atmosphere that remains above the mountains. Only by going into space can they achieve the clearest view of the sky, and also detect radiations, such as X-rays and ultraviolet light, that are blocked by the highest levels of the atmosphere.

The Space age began on October 4, 1957, when Russia launched *Sputnik 1* into orbit, and this was followed a month later by *Sputnik 2* which carried the dog *Laika*. Measurement of the animal's heartbeats, temperature and other reactions, radioed to Earth, suggested that human beings might also survive prolonged periods in space.

The first US satellite, *Explorer 1*, did not follow until January 31, 1958, but its instruments made the first major discovery of the space age - the Van Allen radiation belts around the Earth, where electrons and protons from the Sun are trapped by the Earth's magnetic field. Soon after, probes were sent to explore the Moon and planets, and on the way they detected the *Solar Wind* of subatomic particles streaming from the Sun.

Mankind's first look at the Moon's far side came with the pictures from the Russian *Luna 3* in October 1959. The US *Mariner 2* in 1962 flew past Venus, confirming both its high temperature and the reverse direction of its rotation which had been suspected by astronomers. In 1965, *Mariner 4* sent back remarkable photographs revealing craters on Mars. The work of the early space probes has been extended and improved by later planetary explorers, culminating in remote-controlled landings on the Moon, Venus and Mars–the last in a search for the possibility of life. The odyssey of Voyager 1 and 2 has shed new light on our views of the cosmos.

Probes are now swooping closer to the Sun than ever before to study solar activity, while others are pushing the boundaries of exploration out to *Jupiter* and beyond. Plans are being made to intercept one of those ghostly wanderers of the solar system, the comets.

Manned Missions account for only 3 % of the 2,400 or so spacecrafts which were launched in the first 23 years of the spaceage. The first man to be launched into space was the Russian *Yuri Gagarin* who orbited the Earth once on April 12, 1961. Later Russian cosmonauts, including the first space woman, *Valentina Tereshkova*, (June 16, 1963) were able to stay in orbit for up to five days.

American astronauts made more modest flights in their smaller *Mercury* spacecraft, but in 1965 began the series of two-man *Gemini* flights that overtook the Russian lead in the space race. The team of astronauts in the Gemini programme practised rendezvous manoeuvres, docking procedures and space walks in preparation for the *Apollo* missions to the Moon.

The vital part of Apollo so far as landing on the Moon was concerned was the fourlegged *Lunar Module*, in which two men touched down on the Moon. *The first Moon landing, by Neil Armstrong and Edwin Aldrin*

Space Firsts

- *First man to propound the space flight laws: Sir Isaac Newton (1642-1727) in his book 'Mathematical Principles of Natural Philosophy'.*
- *First artificial Satellite put into orbit: USSR's 'Sputnik' (Fellow Traveller'), Launched on October 4, 1957 and weighing 83.6 kg, it attained an altitude of 2 285.9 km at a velocity of 28 565 km/h.*
- *First Manned Satellite: USSR's Col. Yuri Gagarin took off in a 4.65-ton space vehicle 'Vostok' ('East') on April 12, 1961 to complete a single orbit of the Earth in 89.34 minutes.*
- *First woman in Space: USSR's Lt. Col. Valentina Tereshkova went to space in 'Vostok 6' on June 16, 1963. She completed 48 orbits in 2 days 22 hours 42 minutes. Svetina Savitskaya of USSR became the second woman on Aug. 19, 1982 and Sally Ride of U.S. the third woman on 18 June, 1983.*
- *First 'Walk' in Space: Lt.Col (now Maj.Gen) Aleksey A Leohov from Voskhod 2, was the first person to engage in 'extra-vehicular activity' on March 18, 1965.*
- *First Indian to reach space: Sq. Ldr. Rakesh Sharma in joint Indo-Soviet flight on 3rd April, 1984.*

from Apollo 11, took place on July 21, 1969.

A total of 12 Americans walked on the Moon during the Apollo programme, bringing back 380 kg of rocks and soil. These samples from the Moon, along with scientific measurements made on the surface and from the orbiting mother craft, have helped scientists to piece together a detailed picture of our nearest neighbour in space.

Although no more Moon trips are currently planned, men will eventually return to the Moon, probably setting up small scientific bases like those in Antarctica, from which geologists will continue their study of the Moon and astronomers will observe the sky. Such 'colonies' might also mine the Moon's crust for minerals.

Eventually, *a manned flight to Mars* may be planned, although not before the beginning of the next century. A round-trip to Mars would take a year or more, and would probably be undertaken by a crew of six, flying in two spacecrafts. Possibly the Mars flight will be a joint venture, with cost and construction shared between two or more nations, in the same way as the USA and Russia worked together to achieve the *Apollo-Soyuz link-up* in July 1975.

In the *Skylab space station*, and its smaller Russian counterpart called *Salyut*, astronauts have begun to extend the surveys of Earth resources and astronomical observations begun by satellites. The three Skylab crews, each of three men, brought back a total of 72 km (45 miles) of magnetic tape logging instrumental results, 46,000 Earth resources pictures, and 175,000 images of the Sun taken through the special Skylab solar telescopes.

Space stations allow scientists and engineers to take advantage of the conditions of weightlessness and total vacuum when developing new manufacturing processes. Without gravity, for example, perfect crystals can be grown of materials for electronic components such as transistors. Materials that do not mix under gravity, for example oil and water, form a perfect blend in weightlessness.

Metals can therefore be fused, then cooled and solidified to make new alloys unattainable on Earth. Space conditions can also be used to produce ultra-pure chemicals such as vaccines, or make possible studies of cell growth that may throw new light on biological malfunctions such as cancer.

Before the promising applications of space can be fully exploited, the cost of space launches must be brought down. This has been the incentive for the development in the USA of a new transportation scheme called the *Space shuttle*. The Shuttle's main component is a re-usable spacecraft, *the Orbiter*, which is launched by means of rockets but can glide back to Earth like an aircraft, landing on a runway.

The first Space Shuttle 'Columbia' reached orbit on April 12, 1981 —the 20th anniversary of man's maiden trip to Space. Shuttles Columbia, Challenger, Discovery and Atlantis achieved many firsts in space exploration and research. Shuttle 'Challenger' took Sally Ride, the first U.S. woman, to space on June 18, 1983. The first night flight, launched on August 30, 1983, carried also America's first negro, Guion S. Blueford, who performed space exercises under the eye of Space Physician William Thornton, aged 54, the oldest astronaut to make a space journey.

In November 1984 Shuttle succeeded in retrieving two malfunctioning Satellites, namely Palpa B-2 and Westar-6. These Satellites could be used again. Shuttle made successful retrieval and repair of satellite Solar Max in April, 1984. For this historic feat astronauts had to get out of the Spacecraft and 'walk in space' for as long as 6 hours and 44 minutes.

The American space programme received a setback on January 29, 1986 when their Space Shuttle *Challenger* exploded in midair, 75 seconds after lift off. The crew—six astronauts and a woman school teacher named Christa Mcauliff–all died.

Challenger tragedy was a setback not only for the U.S., but also for many other countries including India which had programmed multi-purpose satellites to be launched by the U.S. shuttles.

The US redoubled her efforts and successfully launched Shuttle Discovery on September 29, 1988 with a five-member crew aboard. In March 1989 space shuttle 'Atlantis' launched a spacecraft on a 1300 - million km voyage to Venus.

On October 9, 1990 U.S. Space Shuttle Discovery again launched the scientific spacecraft Ulysses into the deep space to probe the polar regions of the Sun.

The Soviet Union joined the era of space shuttles on November 15, 1988 when its first reusable shuttle 'Buran' (snow storm) was launched on the world's most powerful booster rocket 'Energia'. Buran circled the earth twice in a little over 200 minutes before returning to the launch site near the Baikonur Cosmodrome in Soviet Central Asia.

The Soviet Union achieved a spectacular space feat on February 20, 1986 when it launched a new orbital space station called *Mir* (Peace) described as a third generation space laboratory. It joined the *Salyut-7* space station that has been in orbit around the Earth since April 1982.

'Mir' is a multi-modular station which can accommodate six spacecrafts at the same time. It has been fitted with one module called 'Quant'. Two more are joining. These modules will function as factories.

Two Soviet cosmonauts were launched to space on *Soyuz T-15* on March 13, 1986 for a rendezvous with 'Mir'. The craft docked with the space station the next day. For the first time in Soviet space history, the entire launch was televised live throughout the world.

The Salyut crew, Leonid Kizim and Vladmir Solovyov, conducted several experiments including flying from one space station to another. They flew to Salyut-7 from Mir, spent 50 days on board and flew back successfully.

Both the Soviet stations have orbits on the same plane some 3000 km apart but the shuttle takes more time than a trip either way with earth because the spaceship Soyuz uses the laws of the celestial mechanics—changes orbits—for the shuttle in manoeuvres designed to save fuel.

Salyut-7 is in the near-earth orbit and it has been manned by changing crews including an Indian and a French cosmonaut.

The European Space Agency, an 11-country consortium has been successfully launching Satellites with its Ariane rocket from Kurou, French Guiana. Its 33rd launch in August 1989 put 'Hipparcos', world's first space-based telescope into orbit. China, Japan, India and Brazil are also going ahead with their space programmes.

(India's Space Programme: See India)

THE EARTH

The earliest systematic theory of the Earth was the geocentric (geo = Earth) theory. According to this theory, the Earth is the unmoving centre of the universe, round which the Sun and the stars and all other heavenly bodies revolve.

The final formulation of the theory was made by Claudius Ptolemy, a Greek astronomer of Alexandria. He brought out an encyclopaedic work on astronomy in about 140 A.D. This work, later known by its contracted Arabic name *Almagest,* remained the Bible of astronomy for another 1400 years.

The heliocentric theory (helios=sun) was first advanced by Nicolaus Koppernigk (1473-1543), a Polish astronomer, better known by his Latinised name Copernicus. In 1543 Copernicus published a book *De Revolutionibus Orbium Coelestium* in which he set out the theory that the Sun was the centre of the universe and that the Earth and other planets revolved round it.

Like all other astronomers of the day, Copernicus believed that the solar system was equivalent to the universe. This was a mistake which was corrected only in recent times. He was also mistaken in assigning circular orbits to the planets. This mistake was corrected by the German astronomer Johannes Kepler (1571-1630) in 1609. For the rest, the Copernican theory was sound and unassailable.

It was left to the Italian astronomer, Galileo Galilei (1564-1642) to save the Copernican theory from extinction. Galileo fought a lifelong battle in defence of the Copernican theory. Before he died he had the satisfaction of knowing that the tide had turned and that the Ptolemians were on retreat.

Sir Isaac Newton (1642-1726) dealt the last blow at the geocentric theory. He formulated the law of gravitation and correlated it with his laws of motion. His book *Philosophiae Naturallis Principia Mathematica* (known shortly as *Principia)* marks a turning point in the history of astronomical thought.

Modern theories on the formation of the Earth and other planets are of course based on the Copernican theory.

The age of the earth was a matter of speculation till very recent times. It was only about 200 years ago, that scientific enquiries were started by geologists. According to their deductions, based on the study of rocks, the age of the Earth is estimated to be around 4,600 million (4.6 billion) years.

Our knowledge of the internal structure of the Earth is derived from studies of earthquakes. The shock waves sent out by an earthquake indicate the physical nature of the regions through which they pass. These studies show that the centre of the Earth is a solid core–the *Inner Core*. The density of this core is about 13 g to the cubic centimetre. The Inner Core is about 1300 km thick and is surrounded by an *Outer Core* of around 2,080 km. The Outer Core appears to be molten.

Earth Data

Superficial area	510 100 500	sq km
Land surface	148 950 800	sq km
Water surface	361 149 700	sq km
Equatorial circumference	40 067	km
Polar circumference	40 000	km
Equatorial diameter	12 754	km
Equatorial radius	6 377	km
Mean distance from the Sun	149 407 000*	km
Time of Rotation on its own axis	23 hrs. 56 min. 4.09 sec	
Period of Revolution round the Sun	365 days 5 hrs. 48 min. 45.51 sec.	
Inclination of the axis to the plane of the ecliptic	23°27'	

Speed of Rockets (that is, velocity required to counter earth's gravity and to rise up into the atmosphere)- A minimum of 8 km (5 miles) per second.

Escape Velocity (that is, speed necessary to break away from the earth into outer space)- 11 km (7 miles) per second.

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* (This is now known as Astronomical Unit, A.U.)

The Outer Core is surrounded by the Mantle which has a thickness of around 2900 km. The Mantle is topped by the crust of the Earth, which varies widely in thickness—from 12 to 60 km. At the centre or the Inner Core, that is at a depth of some 6,370 km, temperature goes up to some 4,000°C and pressure reaches nearly 4 million atmospheres.

The mantle is important in many ways. It accounts for nearly half the radius of the Earth (2 900 km), 83 per cent of its volume and 67 per cent of its mass. The dynamic processes which determine the movements of the crust plates are powered by the mantle.

Starting at an average depth of from 45 to 56 km below the top surface of the Earth, the mantle continues to a depth of 2 900 km where it joins the outer core. The mantle is a shell of red hot rock and separates the Earth's metallic and partly melted core (both the inner and the outer cores) from the cooler rocks of the Earth's crust. It is composed of silicate minerals rich in magnesium and iron. The density of the mantle increases with depth from about 3.5 grams per cubic centimetre to around 5.5 grams, near the outer core.

The upper portion of the mantle, about 250 km thick, is called the *Asthenosphere*. Here the rocks are partially melted, with thin films of liquid distributed between the mineral grains. The red hot nature of the lower mantle and the partially melted nature of the upper mantle (asthenosphere) combine to make the whole mantle plastic or yielding. It is on this plastic base that the top crust of the earth (consisting of oceans and continents) that is to say, the lithosphere, rests. The lithosphere is distinguished from the asthenosphere by the fact that it is cooler and therefore more rigid.

The crust of the earth which tops the lithosphere virtually floats on the asthenosphere. Like other floating bodies the crust seeks an equilibrium riding deeper where it is heavier and rising higher where it is lighter. The mountains on the crust have deep roots of light material to support them and when the load on any part of the crust changes, the surface responds by rising or sinking to restore the equilibrium.

The outer surface of the earth is divided into four spheres. *1. Lithosphere* means the entire top crust of the earth and includes not only the land surface but also the ocean floor. *2. Hydrosphere* is the water surface which includes the oceans, lakes and rivers. *3. Atmosphere* is the blanket of air that envelops the earth. It covers both the land surface and the water surface. *4. Biosphere* is the sphere of life which spreads over all the three other spheres, lithosphere, hydrosphere and atmosphere.

Lithosphere: The lithosphere is the top crust of the earth on which our continents and ocean basins rest. It is thickest in the continental regions where it has an average thickness of 40 km and thinnest in the oceans where it may have a maximum thickness of 10 to 12 km. It constitutes about 1 per cent of the Earth's volume and 0.4 per cent of its mass.

Though the lithosphere technically includes both the land mass and the ocean floor it is often used to indicate only the land surface. Regarded thus, the lithosphere forms only 3/10 of the total surface of the Earth. The rest 7/10 is taken up by the oceans.

As we see it today, the topmost portion of the land surface is sand and soil except where rocky outcrops show. All the sand and much of the soil that we see have derived from ancient rocks. The rocks themselves were originally formed from the molten magma, which erupted from the interior of the earth. Powerful earth movements have heaved up some of the rocks to the top surface, where they are exposed to climatic influences. The process by which rocks are broken down into sand is known as 'weathering'. Many factors operate to weather down the rocks, of which the most important is 'weather' itself.

When rocks heated hot by the Sun are suddenly cooled by rain they crack. When this process goes on for thousands of years big rock formations crumble down as sand. Similarly frost can break down rocks. Water caught in the crevices of rocks turns to ice in winter conditions and expands. This pressure often cleaves rocks. These and other conditions have combined to produce the land formations that we see today.

The contours of the landscape are largely conditioned by the rocky substructure of the lithosphere. Geologically speaking, all materials that make up the crust of the Earth are rocks, whether they are big granite boulders, combustible coal, soft clay or loose fragments of gravel or sand. Rocks which form the substructure of the lithosphere may be broadly grouped into three classes- *1. Igneous rocks, 2. Sedimentary rocks, and 3. Metamorphic rocks.*

Continents

Name	Area sq kilometres	% of Earth's area	Population Estimate	Highest Point in metres		Lowest Point in metres	
Asia	41 667 920	29.5	2 316 312 000	Everest	8 847.7	Dead Sea	396.8
Africa	29 800 540	20.0	401 000 000	Kilimanjaro	5 894.8	Lake Assai	156.1
N. America	24 320 100	16.3	342 700 000	McKinley	6 193.5	Death Valley	85.9
S. America	17 599 050	11.8	219 000 000	Aconcagua	6 958.8	Valdes Penin	39.9
Europe	9 699 550	6.5	660 313 000	Elbrus	5 641.8	Caspian Sea	28.0
Australia†	7 687 120	5.2	13 800 000	Kosciusko	2 228.1	Lake Eyre	15.8
Antarctica	14 245 000	9.6	—	Vinson Massif	5 138.9		

† Australia with New Zealand, Tasmania, New Guinea and the Pacific Islands, (Micronesian, Melanesian and Polynesian Islands) is called Australasia by some geographers while some others call it Oceania.

The Lithosphere is divided into twelve climatic regions.

We know that the face of the Earth, that is, its visible surface has undergone radical changes in the past. Geologists explain these changes as the consequence of the cooling and contraction of the Earth, through thousands of years. This explanation seemed quite unsatisfactory to a German scientist, Alfred Wegener (1880-1930). In 1915, Wegener published a book *The Origin of Continents and Oceans* in which he advanced a new theory, the theory of *Continental Drift*. This theory claimed that the changes in the appearance of the Earth were, in the main, due to the shifting of continents.

Mountains & Deserts: Mountains are conventionally divided into four types, according to their mode of origin: Fold mountains, Block mountains, Volcanic mountains and Residual mountains.

Fold Mountains arise because the rocks in them have been buckled and crumpled by pressure. Just as a tablecloth, when pushed along a table, wrinkles up into folds, the rocks of the Earth's crust react to lateral pressure to form folds. If the pressure is very great, the folds are squeezed tightly into pleats. Further pressure will send the pleats rolling over one another. As the pleats roll up, high elevations are formed. Only massive pressure like those resulting from colliding plates can fold and mould rocks into mountains. In fact, it turns out that all our big mountain systems have been formed by colliding plates. The *Himalayas* rose over such a colliding zone. So did the *Andes* (S. America), the *Rockies* (N. America) and the *Alps* (Europe). The Himalayas, the Andes, the Rockies and the Alps are fairly young mountains and are classed as *new fold mountains*. They have come into being, after the continental drift started with the break up of the super continent, Pangaea.

What are called *old fold mountains* must

Plate Tectonics

The discoveries of the sixties, supporting the theory of Continental Drift, have given birth to a new concept of geology–Plate tectonics. Tectonics simply means the study of rock structures involved in earth movements. Plate tectonics deals with such structures as are in the form of plates. The concept has revolutionised the study of geology in the same way as the Copernican theory has revolutionised the science of astronomy. The Copernican theory entailed a radical change in our ideas of the Earth and the solar system: Plate tectonics has worked a similar revolution in our concept of the Earth itself. It has proved that the Earth is not static but dynamic, so dynamic that it can rightly be described as 'alive and kicking.'

The theory of Continental Drift assumes that the continents plough through the oceans like massive ships. Plate Tectonics tells us that it is not only the continents that are in motion, but the oceans as well. This is so, because the top crust of the Earth is not (as we have thought) an unbroken shell of granite and basalt, but a mosaic of several rigid segments, called plates. These plates include not only the earth's solid uppercrust, but also parts of the denser mantle below. They have an average thickness of 100 km (60 miles). They float on the plastic upper mantle of the Earth, called Asthenosphere, and carry the continents and oceans on their backs like mammoth rafts.

All these plates are in constant motion relative to one another. One source of confusion in distinguishing between continental drift and plate tectonics is the assumption that continents and plates are synonymous. They are not. Continents form only a part of the plates, the surrounding oceans from the rest of the plates. The continents alone do not drift or move. It is the plates containing both continents and oceans that move. So we now talk of plate movements instead of continental drift.

have been formed in the pre-drift era long before the continental masses came together to form Pangaea. Among the old fold mountains are the *Pennines* of Europe, the *Appalachians* of America and the *Aravallis* of India. These mountains have weathered down to stumps long ago.

Principal Peaks

Name	Country	Height (m)
Mt. Everest	Nepal-Tibet	8 848
Mt. Godwin	India	8 611
Kanchenjunga	Nepal-India	8 579
Dhaulagiri	Nepal	8 172
Nanga Parbat	India	8 126
Annapurna	Nepal	8 078
Nanda Devi	India	7 817
Mt. Kamet	India	7 756
Gurla Mandhata	Tibet	7 728
Tirich Mir	Pakistan	7 700
Minya Konka	China	7 590
Mt. Communism	USSR	7 495
Pobeda Peak	USSR	7 439
Muztagh Ata	China	7 434
Muztagh	China	7 282
Chomo Lhari	India-Tibet	7 100
Aconcagua	Argentina	6 960
Ojos del Salado	Argentina-Chile	6 868
Cerro Mercedario	Argentina	6 773
Huascaran	Peru	6 768
Liullaillaco Volcano	Chile	6 723
Tupungato	Chile-Argentina	6 550
Sajama Volcano	Bolivia	6 520
Illampu	Bolivia	6 482
Vilcanota	Peru	6 300
Chimborazo	Ecuador	6 267
Mt. McKinley	Alaska	6 194

Great Deserts

Name	Country	Area in sq km
Sahara	N. Africa	9 065 000
Libyan	N. Africa	1 683 500
Australian	Australia	1 554 000
Great Victoria	Australia	323 800
Syrian	Arabia	323 800
Arabian	Arabia	129 500
Gobi	Mongolia	1 036 000
Rub'al Khali	Arabia	647 500
Kalahari	Botswana	518 000
Great Sandy	Australia	414 400
Takla Makan	China	323 800
Arunta	Australia	310 800
Kara Kum	S.W. Turkstan	272 000
Nubian	N. Africa	259 000
Thar	N.W. India	259 000
Kizil Kum	Central Turkestan	233 100

Block Mountains come into being as a result of vertical earth movements along cracks of faults. Such movements are also caused by the pressure generated by plates. When such vertical earth movements leave a block of high elevation standing between two areas of low elevation, the high land area forms a block mountain. Block mountains are usually steep-sided. The *Vosges* in France and the *Black Forest* mountains in W. Germany are mountains of this type.

Volcanic Mountains form as a result of volcanic eruptions. When a volcano erupts, the materials that are ejected fall around a hole or crater and build up a mountain that is roughly conical in shape and has a crater at the top. *Fujiyama* in Japan, *Vesuvius* in Italy and the *Chimborazo* and *Cotopaxi* in the Andes (S. America) are examples of such mountains.

Residual Mountains: Some mountains are so deeply dissected and reduced by weathering and river action that they stand out as skeletons. The *Catskill* mountains of New York are typical of this class.

Islands: Islands take a large mass of land, the biggest 16 of them accounting for as much as 56 million sq kilometres–greater than the area of the continent of Europe. The smaller islands count by the thousands. Islands are broadly divided into three types, continental, oceanic and coral.

Continental Islands are those islands

that rise from the continental shelf, like the British Isles or Newfoundland. These islands have the same geological structure as the continents to which they are related.

Oceanic Islands are those that rise from the bosom of the oceans. Their geological structure will have no relation to that of the nearest shores. They are very often the tops of submarine mountains or submarine volcanoes. *Ascension* and *Tristan da Cunha,* for example, rise from the Central Atlantic ridge (mountain) while *St. Helena* and *Teneriffe* are islands formed by submarine volcanoes.

World's Largest Islands

Name	Area sq km	Location
Greenland	2 175 600	Arctic Ocean
New Guinea	821 030	West Pacific
Borneo	744 370	Indian Ocean
Malagasy Rep.	590 000	Indian Ocean
Baffin Island	476 070	Arctic Ocean
Sumatra	473 600	Indian Ocean
Honshu	227 970	N.W. Pacific
Great Britain	218 040	North Atlantic
Eliesmere Island	212 600	Arctic Ocean
Victoria Island	212 200	Arctic Ocean
Celebes	189 040	Indian Ocean
South Island, N.Z.	150 460	S.W. Pacific
Java	126 290	Indian Ocean
Luzon	120 790	West Pacific
North Island, N.Z.	114 690	S.W. Pacific
Newfoundland	110 680	North Atlantic
Cuba	107 830	Caribbean Sea
Iceland	102 820	North Atlantic
Mindanao	101 500	West Pacific
Ireland (N. Ireland & Rep. of Ireland)	82 460	North Atlantic
Hokkaido	77 720	N.W. Pacific
Hispaniola (Dom. Rep. & Haiti)	76 480	Caribbean Sea
Sakhalin	74 070	N.W. Pacific
Tasmania	67 900	S.W. Pacific
Sri Lanka	65 600	Indian Ocean

Coral Islands are the work of minute sea organisms called coral polyps. They congregate in large colonies. When the organisms die, their skeletons, which are made of a substance resembling limestone, form big clusters, some of which rise above the water.

One type of coral excels in building reefs. Reef-building corals thrive in warm tropical seas. They usually start building reefs, along the edges of islands. Such reefs are called fringing reefs. Many tropical islands have such fringes. These protect the islands from the ravages of the sea. Sometimes an island, with a coral fringe begins to sink. Its shoreline goes down first, while coral building continues upwards. The sea invades the sinking shoreline and separates the coral reef from the rest of the island. Such a reef is called a barrier reef. The Great Barrier Reef, which extends for more than 2000 km parallel with the coast of Queensland, Australia, appears to have come into existence in this manner. This is the biggest coral reef known and consists almost entirely of the limestone skeletons of countless coral colonies that had existed through thousands of years.

Low circular coral islands each with a central lagoon of shallow water, are called *atolls.* Atolls probably represent the last stage in the evolution of a coral island. When the island around which coral is built sinks, the coral ring remains above water, while the island disappears under the water. In course of time the coral limestone reef is weathered down to soil and seeds carried by birds or wind begin to sprout and produce vegetation. Then the coral reef turns into an inhabitable area—a *coral island* in fact.

Atolls consist of two parts, a central lagoon (watery area) and a surrounding reefland. Sometimes the watery surface is much bigger than the land surface. This is the case with *Kwajelin* in Marshall Islands, Central Pacific, where the water area covers 2850 sq km, while the land area is a narrow ring, with a total length of 280 kilometres. On the other hand, *Christmas Island* in Line Islands, Central Pacific, is an atoll with the largest land area known–480 sq km. Its lagoon or water surface is relatively insignificant.

Hydrosphere: It is estimated that the hydrosphere contains about 1,460,000 cubic km of water. Of this 97.3% is in the oceans and inland seas. The rest 2.7% is found as glaciers and ice caps, fresh water lakes, rivers and underground water.

The total stock of ocean water and fresh water has been fairly constant throughout geological history. But the ratio between ocean water and fresh water has always changed according to climatic conditions. When the climate is very cold much of the sea water is absorbed by glaciers and ice caps and fresh water increase at the expense of sea water. When the climate grows hot, glaciers and ice caps melt and sea water gains at the cost of fresh water. Sea level observations during the last 60 to 80 years indicate that the sea level is rising slowly. This means that the climate is getting hotter.

The oceans cover 70.8% of the Earth's total surface area and hold 1445 million cubic km of water. This water despite its abundance is not directly useful to man, because it is not potable.

The ocean water contains about 3.5 per cent of dissolved salts – chlorine, sodium, magnesium, sulphur, calcium, potassium, bromine, strontium and boron. Minute quantities of carbon, silicon, aluminium, fluorine and iodine are found. The oceanic waters are always in motion, owing to a variety of natural forces.

Solar heat sets ocean water moving. The Sun warms up the water in the equatorial regions causing it to expand and rise by a few inches. This extra rise at the equator causes the water to flow down, to the north and south poles. As the warm water at the equator flows north and south, the heavier cold water (heavier, because of its extreme condensation) in the polar areas sinks below the warm water and spreads slowly along the bottom to the equatorial regions.

This interflow is complicated by the force of the rotation of the Earth. Because the Earth spins eastwards, the sea water tends to roll up to the west, turning slightly to the right in the northern hemisphere, and to the left in the southern hemisphere. This is known as the *Coriolis Effect,* after the French mathematician who discovered it nearly a century ago.

The oceans, unlike the continents, merge so naturally into one another that it is hard to demarcate them. Nevertheless, geographers have divided the oceanic area into 4 oceans, namely the *Pacific,* the *Atlantic,* the *Indian* and the *Arctic.* These oceans, by definition, include the seas, bays, gulfs and other ocean inlets attached to them.

The *Pacific* ocean is the largest and the oldest of the oceans. It occupies 35.25 per cent of the earth's area. It is 16 880 km at its broadest and 11 516 m at its deepest (Mindanao Deep). It has the greatest conglomeration of islands, which fall into three broad groups. *Micronesia, Melanesia* and *Polynesia.*

The *Atlantic* ocean, the second largest ocean, covers 20.9 per cent of the earth's area. Its greatest depth is 8,381 m (Milwaukee Deep).

Oceans

Name		Area (sq km)
Pacific	....	165 242 000
Atlantic	....	82 362 000
Indian	....	73 556 000
Arctic	....	13 986 000

Principal Seas

South China Sea	....	8 142 960
Caribbean Sea	....	2 753 170
Mediterranean Sea	....	2 503 880
Bering Sea	....	2 268 190
Gulf of Mexico	....	1 542 990
Sea of Okhotsk	....	1 527 580
East China Sea	....	1 249 150
Hudson Bay	....	1 232 320
Sea of Japan	....	1 007 510
Andaman Sea	....	797 720
North Sea	....	575 300
Black Sea	....	461 990
Red Sea	....	437 710
Baltic Sea	....	422 170
Persian Gulf	....	238 800
Gulf of St. Lawrence	....	237 760

The *Indian ocean,* the third largest, stretches from Cape Comorin in India to the Antarctic at the South Pole. It takes up 14.65 per cent of the Earth's total surface area. Its greatest depth is 7,725 m (Planet Deep).

The *Arctic* is strictly not an ocean. It is not navigable. It winds round the North Pole and is completely frozen in winter and covered with drifting ice for the rest of the year. However, its separate existence and its area of over 13 million sq km entitle it to be called an ocean.

Though we have only four oceans, there

are seven seas. The proverbial seven seas are made up by dividing the first three oceans into north and south along the Equator and adding Arctic to them, thus we have North Pacific, South Pacific, North Atlantic, South Atlantic, North Indian, South Indian and Arctic Seas.

The following table shows areas of the oceans, with their seas and other inlets detached.

Rivers, Lakes & Falls: The two longest rivers in the world are the Amazon (Amazonas) flowing into the South Atlantic and the Nile (Bahr-el-Nil) flowing into the Mediterranean. Which is the longer is more a matter of definition than simple measurement.

The length of the Amazon as measured in 1969 is 6448 km. A subsequent calculation has placed it at 6750 km. The length of the Nile as measured by M. Devroey of Belgium is 6670 km. If we take the lower figure for Amazon (6447 km) the Nile leads by 223 km. If the greater length is considered (6750 km) the Amazon leads the Nile by 80 km.

However, in judging rivers, the primary criteria are the amount of water they carry and the extent of the area they serve, whether for navigation or cultivation. On these counts the Nile loses to the Amazon by wide margins. The Amazon has the longest stretch of navigable water, 37,000 km. It has the greatest flow of all rivers in the world with an average 119, 000 cubic metres per second (4,200,000 cubic feet of water per second (cusecs)) rising upto 200,000 cubic metres in flood. It has the largest river basin in the world, 7 million square kilometres. It has some 15,000 tributaries, the longest tributary Medeira having a length of 3200 km.

Longest Rivers

Name	Country/ Continent	Length in kilometres
Amazon	S. America	6447/6750
Nile	Africa	6670
Mississippi-Missouri	USA	5970
Yangtze Kiang	China	5470
Ob-Irtysh	USSR	5150
Congo	Africa	4666
Amur	Asia	4350
Hwang	China	4344
Lena	USSR	4260
Mackenzie	Canada	4240
Mekong	Asia	4183
Niger	Africa	4183
Parana	S. America	3942
Yenisey	USSR	3804
Murray-Darling	Australia	3717
Volga	USSR	3685
Maderia	S. America	3218
Yukon	Alaska-Canada	3184
St. Lawrence	Canada-USA	3057
Rio Grande	USA-Mexico	3033
Purus	S. America	2977
Sao Francisco	S, America	2900
Salween	Asia	2815
Danube	Europe	2775
Euphrates	Asia	2735
Indus	Asia	2735
Tocantins	S. America	2735
Brahmaputra	Asia	2700
Syr-Darya	USSR	2700
Si	China	2655
Ganga	India	2655
Orinoco	S. America	2575
Nelson	Canada	2575
Zambezi	Africa	2575
Ural	USSR	2533
Amu-Dar'ya	USSR	2494
Olenek	USSR	2494
Paraguay	S. America	2494
Japura	S. America	2494
Arkansas	USA	2333
Colorado	USA-Mexico	2333
Dnieper	USSR	2280
Rio Negro	S. America	2253
Orange	Africa	2172
Kolyma	USSR	2148
Irrawaddy	Burma	2132
Ohio	USA	2100
Kama	USSR	2030
Don	USSR	1966
Columbia	USA-Canada	1953
Saskatchewan	Canada	1940
Peace	Canada	1923
Darling	Australia	1866
Angara	USSR	1862
Tigris	Asia	1850
Sungari	Asia	1818

Pechora	USSR	1788
Snake	USA	1670
Red	USA	1638
Churchill	Canada	1610
Pilcomayo	S. America	1610
Uruguay	S. America	1610
Magdalena	Colombia	1610

Famous Waterfalls

Name	Country	Height (m)
By Height		
Angel	Venezuela	807
Kukenaam	Venezuela	610
Ribbon	USA	491
King George VI	Guyana	488
Upper Yosemite	USA	436
Gavarnie	France	422
Tugela	S. Africa	411
Wollomombi	Australia	335
Takakkaw	Canada	305

By volume of water

		Average annual flow (cu. m/sec.)
Guaria	Brazil	13 300
Khon	Indo-China	11 600
Niagara	Canada	6 000
Paulo Afonso	Brazil	2 830
Urubupunga	Brazil	2 750
Iguazu	Argentina	1 750
Patos-Maribondo	Brazil	1 500
Victoria	Zimbabwe	1 090
Grand	Labrador	1 000
Guyana	Guyana	660

Atmosphere: The atmosphere is an insulating blanket protecting the Earth. It softens the intense light and heat of the Sun. Its Ozonic (O$_3$) layer absorbs most of the very deleterious ultraviolet rays from the Sun and thus protects living organisms from extinction.

The atmosphere is bound to the Earth by gravity. Satellites like the Moon, which have very low gravitational power, cannot and do not hold an atmosphere.

Air pressure simply means the weight of the entire air column over a given point. Air, of course, has very little weight. A litre of air weighs around 1.3 g. At the sea level, the air pressure is 1033.6 g per sq cm (14.7 pounds to the sq inch). This pressure is usually described as one *atmosphere.*

The atmosphere is composed of various gases and water vapour, and in its uppermost reaches, it is charged with subatomic particles. Up to about 50 km from the Earth, the atmosphere consists of about 78 per cent nitrogen, 21 per cent oxygen (O$_2$) and minor percentages of argon, carbon dioxide, neon, helium and methane, in that order. Above 50 km, the atmosphere is made up of atomic oxygen (O$_1$) ozone (O$_3$), helium and hydrogen.

The presence of atomic hydrogen in the upper atmosphere has recently been confirmed by a camera left on the surface of the Moon by the Apollo-16 mission. The camera has revealed a cloud of atomic hydrogen extending outwards from the Earth to about 64,000 km.

Water vapour is present in the lower atmosphere, say up to 12 km, in concentrations ranging from 0.01 per cent to 1 per cent. Although the amount of water vapour in the atmosphere is very small, its importance is very great, for without water in the atmosphere, there would be no water on Earth. Water enters the atmosphere by evaporation from the hydrosphere (and also by transpiration of plants) and leaves the atmosphere by precipitation as snow or rain. It is a never-ending two-way traffic.

Clouds are made of water vapour that has evaporated from the Earth. They are very tiny droplets of microscopic size and are too light to fall down as rain. So they ride on the air waves until they condense and then fall down as rain.

It is the surge of electricity from the Earth that makes lightning the awesome phenomenon that it is. The lead, however, is taken by the clouds which send down a rather weak stroke called the leader stroke. The Earth responds by sending up a much more massive stroke to the clouds. The whole thing takes less than a second, so that we see the leader stroke and the counter stroke as one flash of lightning.

Dry air is highly resistant to electricity. When the air is loaded with water vapour it becomes a better conductor. Nevertheless, much power is required for the stroke to rip through the air. This excessive discharge of electricity heats up the air around the passage (of the stroke) to incandescent temperatures, say 10,000°C. It is this glowing air that we see as lightning flash. The heat also causes a sudden expansion of air which, as the heat disappears, contracts quickly again. This sudden expansion and contraction produce the familiar thunder clap. Although both occur at the same time, we see the flash first because light travels much faster than sound.

The character and composition of the atmosphere change as we go higher and higher. Altitudinally arranged, there are 4 important spheres, with 3 pauses. They are: 1. Troposphere with Tropopause, 2. Stratosphere with Stratopause. 3. Mesophere with Mesopause and 4. Ionosphere or Thermosphere.

BIOSPHERE

The idea of a biosphere (sphere of life) was first suggested by the Austrian geologist Eduard Suess nearly a century ago. It was at that time an insignificant concept. Today, however, the biosphere has become the most important problem faced by man.

The distinguishing feature of the biosphere is that it supports life. It is estimated that the biosphere contains more than three hundred and fifty thousand species of plants including algae, fungi, mosses and higher forms of plants, and eleven million animal species ranging from uni-cellular protozoa to man. The biosphere supplies the essential requisites of life for all these species, namely light, heat, water, food and living space or habitats.

The biosphere, or the *eco-system*, as it is generally called, is an evolutionary system. It represents a stable equilibrium of various physical and biological factors which have been operating in the past. The organic continuity of the system rests on a delicate network of interdependent relationships. The air, the water, man and the animals, plants and planktons, the soil and bacteria are all invisibly interlinked in a life-sustaining system we call the environment.

The eco-system or the environment has a *rhythm* and movement of its own which depend upon a whole set of delicately balanced cycles. All living organisms—microbes, plants, animals, man—have survived by adjusting themselves to the environment and attuning their lives to rhythm. It is, therefore, absolutely necessary that these cycles should be maintained unimpaired.

What keeps the biosphere going is solar energy which comprises 99.98 per cent of the total energy supply of the biosphere. Day in and day out the Sun pours forth its energy in the form of sunlight. Light consists of bundles of energy called *quanta*. The energy content of a quantum of light is proportional to its frequency. The shorter the wavelength, the higher the frequency and the greater the energy content.

The process by which solar energy is transferred to molecules is called photochemical process. In this process sunlight excites the electrons in a molecule and kicks them out. These released electrons pair with other electrons from a neighbouring atom or molecule and thus from electron-pair bonds. These new bonds create new molecules.

The most important photochemical activity in the biosphere is *photosynthesis* in plants. Photosynthesis is a complicated process. The light absorbed by chlorophyll molecules and by other pigments in plants is transferred to electrons in such a way as to create strong oxidants, that is, molecules that readily remove electrons from other molecules (oxidise them), or reductants, that is, molecules that readily supply electrons to other molecules (reduce them).

It is these oxidants and reductants that assist plants in producing carbohydrates and oxygen from molecules of carbon dioxide and water. Plants respire (give out) oxygen but retain carbohydrates which are converted to energy and stored in the form of chemical bonds, notably those of adenosine triphosphate (ATP) which is the basic energy currency of all living cells. High energy phosphate bonds of ATP contain 12,000 calories and release 7,500 calories when broken.

This energy is carried up the food chain by herbivores feeding on plants and carnivores feeding on herbivores. Omnivores like man draw their energy both from plant and animal sources. Much of the energy drawn by plants and animals (including man) is consumed and spent in maintaining the process of life.

The energy that is not expended in the course of life is stored in dead matter. Decomposing bacteria break up the dead matter and convert it into *humus* or *organic sediments*, releasing carbon dioxide, water and heat into the biosphere. Thus the basic ingredients of life are returned to the soil. The plants draw their nutrients from the soil and keep the cycle going.

Heat Cycle. Heat is one of the prime requisites of life. This is supplied by solar radiation. It is calculated that the solar heat reaching the Earth's orbit (just above the atmosphere) amounts to about 2 calories per sq centimetre per minute. But the Earth gets only less than half the radiation reaching the top of the atmosphere.

About 2 per cent is absorbed by the ozone layer in the atmosphere. Atmospheric water vapour, carbon dioxide and dust particles absorb around 18 per cent. The clouds reflect back into space some 23 per cent. About 22 per cent is scattered by the atmospheric dust. The earth receives only the balance of 38 per cent. But the story does not end there. Out of the 38 per cent solar radiation received, the Earth re-radiates about 7 per cent by long wave radiation, thus reducing the stock of terrestrial energy to 31 per cent.

At the same time, out of the 22 per cent scattered by the atmosphere, 16 per cent ultimately reaches the Earth as *diffuse radiation*, the rest 6 per cent being irretrievably lost in space. Thus, on the whole the Earth receives about 47 per cent of the solar energy reaching the atmosphere. Meanwhile, the atmosphere acting as an intermediary between the Sun and the surface of Earth, retains about 5 per cent of the energy as sensible heat and about 24 per cent as latent heat in water vapour.

It is essential that the absorption and re-radiation of heat should ultimately balance. Otherwise the Earth would experience a net increase in heat or a net decrease according as a surplus or deficit of heat results from radiation. The balance between absorption and re-radiation is mainly regulated by water vapour in the atmosphere.

There is only a very little amount of water in the atmosphere, about 0.001 per cent. This insignificant amount of atmospheric water exercises an influence on the climate of the Earth, out of all proportion to its total mass. Besides keeping the balance between the absorption and radiation of heat, it controls the water cycle and determines our climatic conditions.

Carbon Cycle. The biosphere contains a complex mixture of carbon compounds, in a continuous state of creation, transformation and decomposition. Practically all organic matter originates in the process of photosynthesis. The plants use the radiant energy of the sun to convert carbon dioxide and water into carbohydrates by splitting water to derive hydrogen, and by drawing in carbon dioxide from the air. In the process the plants release free oxygen (O_2) into the atmosphere.

While plants absorb carbon dioxide during photosynthesis, all living organisms respire and release carbon dioxide and decomposing bacteria do the same in regard to dead matter. But while respiration and decomposition go on all the time, photosynthesis takes place only during daytime. During daytime, carbon dioxide in the atmosphere comes down from an average of 320 parts per million to around 305 parts but at night it increases, going up to as much as 400 parts per million, near the ground level.

Apart from the daily production and consumption of carbon (in the form of carbon dioxide), the Earth has a vast stock of carbon in permanent form. This stock consists of inorganic deposits (mainly carbonates like calcium carbonate etc.) and organic fossil deposits (chiefly coal, shale and oil). When we burn fossil fuels, we are merely adding more carbon dioxide to the atmosphere which has an excess supply already.

Oxygen Cycle. Oxygen not only supports life but also plays a fundamental role as a building block of practically all vital molecules accounting for about a fourth of all the atoms in living matter.

The most recent factor affecting the oxygen cycle of the biosphere and the oxygen budget of the Earth is man himself. He inhales oxygen and exhales carbon dioxide, thus reducing the stock of oxygen and increasing the supply of carbon dioxide. He goes further and burns fossil fuels, depleting the oxygen supply still further. He reduces photosynthetic activity, by cutting down forests and replacing them with cities.

Some astronomers think that the original supply of oxygen in the atmosphere came from the ultraviolet rays of the Sun which broke up the water molecules in the upper atmosphere into hydrogen and oxygen. Whatever may be the initial source of the oxygen in the atmosphere, what is important is that the plants are now augmenting the oxygen supply by photosynthesis. They are not only augmenting our oxygen supply but also reducing the total supply of carbon dioxide which is increasing to alarming dimensions.

Nitrogen Cycle. Nitrogen as it is obtained in the atmosphere cannot be used by the higher organisms. It has to be "fixed", that is, incorporated into a chemical compound. Nitrogen, in other words, has to be converted into *ammonia* or *amino acids*, so as to be of use to plants and animals.

Fixation of atmospheric nitrogen on land is carried out by organisms called diazotrophs who possess the genetic code for the synthesis of enzyme nitrogenase which catalyses nitrogen fixation. These organisms fall into two broad classes — symbiotic and non-symbiotic. Symbiotic diazotrophs operate in association with some species of plants like legumes. They contribute the lion's share (83%) of nitrogen fixation on land. Non-symbiotic agents who contribute the rest (17%) include blue green algae, aerobic (those requiring oxygen) bacteria and anaerobic (those who do not require oxygen) bacteria.

The total amount of nitrogen required anually by the biosphere is estimated to be 1,050 million metric tonnes (mmt). Of these the diazotrophs account for only 140 mmt. Non-biological agents like lightning or fire contribute 40 mmt. The balance of 870 mmt. comes from nitrogen locked up in dead plants and animals. These are recycled by nature as nitrates. The nitrates are converted into amino acids by decomposing bacteria. In aerobic conditions, where oxygen is available, bacteria will again intervene to oxidise the amino acids into carbon dioxide, water and ammonia. Thus nitrogen in the form of ammonia is returned to the atmosphere, where it gets dissolved in rain water, and ultimately replenishes the Earth.

Man has interfered with this natural cycle by industrially fixing nitrogen. He is now converting nitrogen into assimilable forms by artificial methods. Production of nitrogenous fertilizers has increased phenomenally in the last few decades. This means that there is an extra input of nitrogen into the atmosphere. This extra input is already larger than the natural output. We cannot now say how far this extra input will affect the biosphere or in what direction.

Water Cycle. Water plays a versatile role in the functioning of the biosphere. It is essential for all forms of life, plants, animals and man. The water cycle has two distinct branches — the atmospheric branch and the terrestrial branch. In the atmosphere, water exists mainly in gaseous form. On the Earth, liquid forms and solid forms (ice) predominate.

Water is important to the biosphere in that it is from water that the biosphere draws its most abundant element, hydrogen. Hydrogen in the form of carbohydrates constitutes a very important source of energy for all living things. Although we have a plentiful supply of water in the oceans, it is not of direct use to us.

We depend upon a small stock of water—less than 1 per cent — contained in our rivers and fresh water lakes and in the subsoil. This little stock of water is replenished by an even smaller stock of mobile water — less than 0.01 per cent — which circulates in the atmosphere as water vapour much of which ultimately falls down as rains.

The water cycle of the biosphere depends on the reciprocity of evaproation and precipitation. Liquid water on the Earth goes into the atmosphere as vapour by evaporation and transpiration of the plants. The vapour is returned to Earth (precipitation) as rain or snow.

ECOLOGY

Man's meddling with nature, chemical effluents, nuclear waste, acid rain and ever increasing presence of carbon-dioxide in the atmosphere have resulted in the greatest ecological crisis known to mankind. The death of 2,500 persons at Bhopal in 1984 due to inhalation of poisonous gas leaked out of an insecticide plant and the disastrous melting down of nuclear reactor at the Chernobyl power station in the USSR in 1986 were warnings to humanity.

Ecology has been defined as the study of organisms in relation to their environment. This covers the whole world of organic life—plants including fungi and animals including microbes and man. Then, there is the environment itself, which includes not only the animate organisms that populate the biosphere but also the inanimate forces operating in nature.

Though ecology covers all species of life, the species which occupies the centre of the stage is man, because he alone, of all species, has set out on confrontation with nature. His fight with the established natural systems has had a long history. But it is only in the latter half of the 20th century that it has assumed the proportions of a crisis. This is what is described as the *Ecological Crisis.*

Since the Industrial Revolution, his interference with the ecosystem increased both in volume and intensity. Man had by that time colonised the far corners of the Earth. Everywhere he went he had fought nature and won. In the first flush of success he described his progress as the *Conquest of Nature.* Now he wonders who is conquering whom.

In the ecosystem all species of life, plant and animal, are inter-linked with one another. Interference with any species will have long standing repercussions on others. We have been massively intervening in the environment without quite understanding its complications. Often enough, we realise the magnitude of the damage we have wrought long after the mischief has been done and the situation has passed beyond repair. The Dodo is a typical case.

Agriculture was man's first great challenge to natural systems. He cleared forests to grow food for himself and built huge irrigation systems to assure a perpetual supply of water for his crops — and prospered. The ancients knew, as Plato tells us, that over-cropping and over-grazing will lead to soil erosion which may make deserts of fertile land. But that did not stop them. Look at the debris which our great civilizations have left behind them.

Ancient Sumeria—modern Iraq—was the granary of the *great Babylonian Empire.* The Sumerians harvested two crops and grazed sheep between the crops. Today less than 20 per cent of the land in Iraq is cultivated. "The landscape is dotted with mounds representing forgotten towns, the ancient irrigation works are filled with silt—the end product of soil erosion—and the ancient seaport of Urs is now 250 km from the sea with its buildings buried under as much as 10 m of silt".

Apart from erosion there is another factor that may convert good land into barren tracts. This is salinity. Salinity appears where the groundwater table is lowered owing to the excessive consumption of groundwater resources. All over the world there are large tracts of land blighted by salinity—in Mexico and several other parts of America, in Tanzania and many other parts of Africa, in India, China and South East Asia. In spite of this bitter experience, the reckless tapping of underground water goes on merrily all over the world. Peter White writing on Greece in the *National Geographic* says, "Driving eastward in Macedonia, I get more intimations of new-found prosperity.....Around Pella so many wells have been dug that the fountain of Alexander the Great has dried up".

We have through the centuries created vast deserts of fertile lands. But we do not yet know how to make the deserts bloom. Despite the claims of Israel, it is still a far-off

No Greenhouse Warming !

In a finding that has shocked its own scientists, the National Aeronautics and Space Administration (NASA) has found that there has been no greenhouse warming in the last decade.

The finding, based on data collected from 1979 through 1988 by the TIROS-N series of weather satellites, measuring the earth's temperature precisely with instruments probing the atmosphere from space, has been published in the Science Magazine.

This is significant because 1979-88 was one of the hottest decades, with six of the warmest years on record. Mr. Roy W. Spencer of the Marshall Space Flight Centre in Huntsville, Alabama, co-author of the study, said: "We found that the earth's atmosphere goes through fairly large year-to-year changes in temperature and over that 10 years period we saw no long-term warming or cooling trend"

If this is indeed the trend, people living in coastal areas can breathe easy. They are not in danger of being drowned in floods. Those owning farmlands can be reassured that they will continue to reap a normal harvest. People in the desert areas who hoped that the warming trends will turn their regions into rich farmland will be disappointed.

However, Mr. Christy, a climate research scientist at the University of Alabama and who presented the study along with his colleague, cautioned against hasty misuse of the findings. "About the long-term global warming, it (the finding) does not say anything. That does not mean that warming is not occuring...."

dream. All our natural resources are going the same way. We are consuming our minerals with an abandon that is hardly credible.

Since the Industrial Revolution our exploitation of natural power resources, coal and oil, has assumed alarming proportions. The Industrial Revolution itself was powered by coal. Then came oil. Both threaten to give out, oil sooner than coal. Now that the OPEC countries are holding the rest of the world to ransom for oil, we have begun to think of alternate sources of power that will not run out on us like coal and oil. This is the only silver lining on the overcast power front.

What we destroy, we cannot replace, nor can nature—not at this speed. It has taken millions of years for nature to stock up our present supply of minerals and fossil fuels but it will take us only a few centuries to run through them. As pillagers and predators, we surpass all other species just as we do as thinkers and creators. Only our thinking and creative abilities are poor compared to our capacity for unthinking destruction.

No bird fouls its own nest. But the doubly wise man (homo-sapiens) excels in this obnoxious practice. It has been estimated that in Britain the average person throws out about 700 g of garbage every day. In the US the wastes dumped into the biosphere are much greater—more than 2 kg per person per day. To these familiar wastes are added whole heaps of industrial by-products, which neither the producer nor the consumer wants.

The advance of technology in recent years has been dubbed the *Technological Revolution*. This revolution, like all revolutions, has backfired. While at one end it has hastened the consumption of scarce materials, it has at the other end thrown up a lot of unwanted wastes. These wastes are piling up and have already become unmanageable. Some of these wastes like synthetic plastics are not 'bio-degradable'. Therefore they may persist for years as abiding threats to the eco-system.

But worst of all are the pollutants which a sophisticated technology has been spewing all around us. Careful studies have shown that air pollution can damage vegetable crops and in general affect plant growth. This is reflected in the low nutrient quality of the plant products and consequent ill effects on the health of the animals and people who depend upon these crops. Here again, we have a remarkable *amplification.* But far more important are effects that arise secondarily.

Effluents are wastes containing assimilable nitrogen and phosphates which our factories are discharging into surface waters like rivers and lakes. They enrich the water leading to the overgrowth of algae and similar organisms to the detriment of other organisms and finally to the extinction of all. "As large a body of water as Lake Erie", says Commoner, "has already been overwhelmed by pollutants and has in effect died.....Sewage and industrial wastes and run-off from heavily fertilized farmlands have loaded the waters of the lake with so much excess phosphate and nitrate as to jar on the biology of the lake permanently out of balance. The fish are all but gone".

The widespread use of combustible fuels bodes ill for all species of animals in two ways. It depletes the oxygen supply and increases carbon supply.

When and if we reach the point, where the rate of combustion exceeds the rate of photosynthesis, we have not only to worry about running out of oxygen at night (there is no photosynthesis in the absence of light) and in winter but also the oxygen content of the atmosphere will actually decrease while the carbon dioxide content increases.

Between 1860 and 1960, the combustible fuels added nearly 14 per cent to the carbon dioxide content of the air, which had until then remained constant for many centuries.

However, the greatest single source of contamination of the planet now is radio activity, from the explosions of nuclear weapons in the atmosphere. Fallout from nuclear tests contaminates every part of the Earth's surface and all its inhabitants.

Green Peace Ship 'Rainbow Warrior' which was on its way to lead a "Peace fleet" to the French nuclear test site at Mururoa Atoll in the Pacific was sunk in Auckland harbour on July 10, 1985 by French agents and the ensuing political scandal shook the very foundation of the French Government.

Save the Flora, Cries WWF

Plants have served mankind in various ways from the days of yore. They have fed numerous mouths and cured diseases since life began on this Earth.

Survival of human species is very much dependent on plants. A large portion of the food, medicines and materials we consume in our every day life is derived from some wild species of plants which grow in the tropics. "Catharanthus roseus' is one such plant which originated in Madagascar and which enables many children suffering from Leukaemia stay alive. Dr. Richard Evans Schultes, Director of the Botanical Museum at Harvard University says, "The drugs of the future grow in the primeval jungle."

World Wide Fund
WWF For Nature

Apart from feeding and protecting human lives, plants also protect fragile soil from erosion, regulate atmosphere, maintain water supplies for agriculture and prevent formation of deserts.

Despite the immense value of plants, man has been destroying them simply due to his ignorance and short-sightedness. According to statistics, every year we destroy a tropical rain forest three times the size of Switzerland. About 25,000 flowering species are on the verge of extinction.

The Worldwide Fund for Nature (WWF) which celebrated its silver jubilee in 1986 at Assisi, has supported more than 4,000 projects in 130 countries of which "Project Tiger" is one of the most successful.

WWF Founder and Trustee: Guy Mountfort; President, WWF International: H. R. H. Philip, Duke of Edinburgh; Director-General: Charles de Haes; Ex-Vice President: Zafar Futehally, India.

CFCs to be Phased Out

One of the major achievements of the meeting in London in August 1990 to work out amendments to the Montreal Protocol was the tightening of the time frame to enable the complete phasing out of the CFCs (chlorofluorocarbons), harmful to the ozone layer, and other harmful chemicals by the year 2,000. It was a response to the urgent realisation that the ozone layer will not wait for long drawn out negotiations, that it is an issue in which the North-South divide does not count.

It was thus also perhaps for the first time that the developed countries were forced to accept the point of view of the developing world and create the conditions under which India, China and the rest of the poor nations could join in the co-operative effort to fight global pollution.

Also for the first time the affluent North, particularly the United States, could not press home its advantage of superior technology. After having rejected the idea of a separate global fund to help the developing countries phase out the ozone harmful technology during the preparatory talks in Geneva, it had to climb down and agree to contribute to an interim fund of $160 million (Rs. 288 crore) which is to be increased to $240 million (Rs. 432 crore) when India and China join the Protocol

From the point of view of the developing countries, led by India and China, the London meeting was quite a success. The blatant disparities in the Protocol are to be removed. Under the 1987 Protocol the developed countries, which in fact consume and produce 88 per cent of the ozone harmful chemicals, were allowed to withdraw from the Protocol after joining it. The developing countries were not to be allowed to do so.

The 1987 Protocol had provided only for a 50 per cent cut in harmful CFCs by the year 2,000 with a 10-year extra time for the developing countries. The amendments seek to achieve a 100 per cent phase-out in the developed world by the year 2000, with a 10-year time lag for the rest. For halons also the phase-out is to be complete within the same time-frame, except for some essential fire fighting in enclosed spaces like nuclear plants and submarines.

What is Ozone, CFC

OZONE is a form of oxygen that is present in the earth's atmosphere in small amounts. While its presence in the lower atmosphere, closer to earth, contributes to air pollution and causes damage to human tissue, its presence in the outer-reaches of the earth's atmosphere is absolutely vital to life.

Located 30 km above the surface of the earth, it provides a shield against the lethal ultra-violet rays of the sun. If these rays penetrate the ozone layer life would not be possible on earth.

Ozone concentration here is 10 parts per million —that is, 10 parts of ozone per million parts of air. Ozone is naturally produced when high energy radiation from the sun's rays strike the oxygen in the outer reaches of the atmosphere, converting some of it into ozone. Electric discharge reactions, including lightning and electric sparks from motors, also convert oxygen into ozone.

The chlorine contained in chlorofluorocarbons (CFCs) which are used as propellants in aerosols, as refrigerants and in coolants in air-conditioners, is chiefly responsible for the depletion in the ozone layer.

CFCs—made up of chlorine, fluorine and carbon—are so chemically inert that once they are released in the atmosphere, nothing stops them till they rise to the stratosphere—and every molecule of CFC released into the air does so eventually. The sun's ultra-violet rays break down the CFCs and release their chlorine content —and chlorine is the worst thing that could happen to ozone.

THE WORLD OF PLANTS

The first man whom we can call a botanist was Theophrastus, who lived in the fourth century B.C. and was a pupil of Aristotle. He divided all plants into trees, shrubs, subshrubs and herbs—groups which are not natural in the modern sense but which had value for someone interested in the culture and uses of plants. The Romans added to botany only the notable compilations of Pliny and certain poetical works.

A Greek physician, Dioscorides, wrote in the first century A.D. a compendium of medicinal herbs which was widely used. After the disintegration of the Roman empire there was little growth of science for many centuries.

In 1859, the publication of *On the Origin of Species by Means of Natural Selection by* Charles Darwin profoundly changed the course of texonomy. "Natural" acquired a new meaning; it referred to relationship by descent. A "natural family" was now one whose species were believed to be descended from one ancestor, the closeness of the relationship between the species depending on the length of time since this common origin. A scheme of classification, so far as it claimed to be natural, became henceforth an attempt at a cross-section of evolution in progress, and all previous schemes were re-examined in this light.

The scientific classification of plants and the plant kingdom has been undergoing constant revision. During the mid-1800's botanists divided all plants into two main groups, the *cryptogams* (hidden reproductive parts) and the *phanerogams* (visible reproductive parts). The cryptogams included the ferns, mosses, algae and fungi—plants that did not develop obvious reproductive structures such as flowers or seeds; the phanerogams were the flower-bearing or seed-producing plants. The basis for this division, however, was shown to be artificial and not indicative of true relationships.

Today, with the wide acceptance of the five-kingdom system as opposed to the traditional two-kingdom system of plants and animals, the bacteria, some of the algae forms, and the fungi are no longer considered plants. They have now been placed in kingdoms of their own; the kingdom Monera for the bacteria and blue-green algae (the latter also now known as the Cyanobacteria); the Kingdom Protista for the euglenoid algae, the yellow-green algae, the golden brown algae, the diatoms, and the dinoglagellate algae; and the Kingdom Fungi for the fungi.

The remaining plant kingdom has been divided by various authorities into 5 to 18 major groups. The larger numbers of groupings are due in part to the plausible rejection of "vascular plants" (Tracheophyta) as a natural assemblage reflecting close relationships, with the result that each predominant group of vascular plants is regarded as a main division.

More commonly, perhaps, only six main divisions are recognized, usually as a tentative working arrangement readily subject to modification. The following table lists these six divisions, as well as the subgroupings within the division Tracheophyta and within the subdivision Spermopsida.

Division Chlorophyta (green algae)
Division Charophyta (stoneworts; sometimes regarded as part of the Chlorophyta)
Division Phacophyta (brown algae)
Division Rhodophyta (red algae)
Division Bryophyta (mosses, liverworts, hornworts)
Division Tracheophyta (vascular plants; not recognized in some classifications, which consider the following subdivisions to be full divisions)
    Subdivision Psilopsida (whisk ferns)
    Subdivision Lycopsida (club mosses)
    Subdivision Sphenopsida (horsetails)
    Subdivision Spermopsida (seed plants;

In that classification in which the seed plants are treated as a full division—Spermatophyta—the following classes are regarded as subdivisions; in those classifications that do not recognize "seed plants" as a valid category, the following classes are regarded as full divisions)

Class Pteridospermae (seed ferns, extinct)
Class Cycadae (cycads)
Class Ginkgoae (ginkgos)
Class Coniferae (conifers)
Class Gneteae (gnetums)
Class Angiospermae (flowering plants)

The following brief characterizations of the various plant groups also include descriptions of the different types of fungi, which have been traditionally classified among the plants.

Green Algae: The Chlorophyta, also called the Chlorophyceae or Chlorophyta, are a group (3,700 species) of mostly small aquatic plants, one-celled, colonial, and many-celled, having a great variety of forms. The Chloroplasts of many kinds are small disc-like bodies like those of vascular plants; those of others are larger, limited in number (sometimes one to a cell), and of an intricate and often decorative form as seen in a microscope.

Stoneworts: The Charophyta are many-celled aquatic plants growing erect and formed of a central stalk with branches in circles (whorls) at definite nodes. There is no vascular tissue, but some internal differentiation; some cells are elongated and contain numerous nuclei.

Brown Algae: The Phaeophyta, Phaeophycophyta, or Phaeophyceae are margin algae, many growing attached to rocks or to the bottom between tide levels in the colder seas. Some are delicate and branched; many are large and leathery and have parts that simulate a stem with leaves. The latter, known as kelp, are harvested on certain coasts and used as manure or as a source of the iodine that they accumulate from the sea water.

Red Algae: The Rhodophyta, Rhodophycophyta or Rhodophyceae are 2,500 species of mostly marine algae of moderate size, especially abundant in tropical seas where they often grow at great depths. A few species grow in fresh water and moist soil. Many species are delicately and beautifully branched; others form thin membranes with curled margins.

Slime Molds: The Myxomycota, Myxomycetes or Mycetozoa are organisms (whether plants or animals is controversial) which form a slimy mass called a plasmodium on decaying leaves, wood, soil, leather, etc.

Algalike Fungi: The Phycomycota or Phycomycetes are a somewhat miscellaneous group of molds and microscopic fungi. The name of the division is derived from their resemblance to certain threadlike algae.

Sac Fungi: The Ascomycota or Ascomycetes are fungi characterized by a reproductive body called an ascus—a special type of sac which contains spores. Many sac fungi are molds which occur on bread, jams and other foods or which are normally present in cheese.

Among these is *Penicillium,* from a species of which penicillin is obtained. Other species are parasites, causing such plant dieases as leaf curl of peaches, powdery mildew of many plants, apple scab and chestnut blight.

Club Fungi: The Basidiomycota or Basidiomycetes are the most complex fungi, including mushrooms, puffballs, earthstars, bracket fungi and others with easily visible bodies of various shapes. Among them are also the parasitic fungi that cause the very serious diseases called rusts and smuts.

Fungi Imperfecti: Many fungi are incompletely known. The complete life cycle of many species that cause diseases of plants is not understood. They form spores of characteristic types and are classified accordingly.

Mosses and Liverworts: The Bryophyta are small plants, many with simple stems and leaves but no true vascular tissues; the mosses (Musci) ubiquitous (14,000 species), leafy, erect or creeping; the liverworts (Hepaticae; 8,500 species) flat, lobed, or leafy, addicted to moist places. The alternation of generations in these plants has been described above.

Psilophyta: The Psilopsida or Psilophyta comprise two living genera and a number of fossils of vascular plants. The plants consist of an upright, branched system which grows from a horizontal underground system. There are no roots. The stem contains special ducts (Xylem) through which water moves,, and others (phloem) which serve for the movement of foods in solution.

Club-Mosses and Their Relatives: The

Lycopsida, Lepidophyta, or Microphyllophyta are vascular plants mostly with upright or trailing stems covered with small leaves, many species bearing spores in definite parts called cones. Club-Mosses (lycopods) also known as ground pine, are familiar in northern forests, but there are also many tropical species.

Horsetails and Their Relatives: The Sphenopsida, Calamophyta or Arthrophyta are a largely extinct group represented by a single living genus, the horsetails (Equisetum). The horsetails have upright stems which grow from underground branches, both being marked by definite nodes at regular intervals.

Ferns: The Pteropsida, Pterophyta or Filicineae are vascular plants with mostly large leaves commonly divided into many segments. The stem of ferns that grow in temperate regions is small and often subterranean, producing a crown of leaves at its growing end and roots elsewhere from its surface. Many tropical species known as tree ferns have upright tree-like stems with a crown of very large leaves.

Maidenhair Tree: The maidenhair tree of the genus Ginkgo resembles cycads in its life cycle, but in many details is so unique that it is placed in a division by itself. It is not known in the wild state, having been cultivated for centuries in China. The leaves are small and fan-shaped.

Gnetophyta: The Gneteae, also called the Gnetophyta or Gnetales, are a small group of three peculiar genera of doubtful relationships. Most species of Gnetum are tropical vines and resemble flowering plants. Ephedra species are a group of shrubby desert plants with scale-like leaves.

Conifers: The Coniferae are trees and shrubs mostly with small leaves (scales or needles in many genera) that are retained for more than a year, forming pollen and seeds in cones. This group forms the coniferous forests of the north and of mountains and includes the largest plants on earth.

Flowering Plants: The Flowering Plants, called the Angiospermae or Anthophyta, compose more than half of all known species of plants—about 200,000 species. They range in size from minute floating duckweeds to giant eucalyptus and silk-cotton trees and include plants of a great variety of forms; cacti, water lilies, violets, sunflowers, orchids, magnolias, pitcher-plants, Indian pipe, mistletoe, Spanish moss.

THE WORLD OF ANIMALS

The Animal Kingdom is formally classified into major groups known as phyla. Each phylum has subdivisions for subphyla, then classes, and each class is partitioned into orders. Further successive smaller groupings are families, genera and species. As one progresses from larger (phylum) to smaller (species) units, the animals in each group are found to be more closely related. Within a species, all the animals are very similar in characteristics and can interbreed to produce offspring capable of interbreeding. Examples of this system of the classification for trout, frog, dog and man are given below.

	Trout	Frog	Dog	Man
Phylum	Chordata	Chordata	Chordata	Chordata
Subphylum	Vertebrata	Vertebrata	Vertebrata	Vertebrata
Class	Osteichthyes	Amphibia	Mammalia	Mammalia
Order	Isospondyli	Anura	Carnivora	Primate
Family	Salmonidae	Ranidae	Canidae	Hominidae
Genus	*Salmo*	*Rana*	*Canis*	*Homo*
Species	*Gairdnerii*	*pipiens*	*familiaris*	*sapiens*

The Animal Kingdom may be divided into two subkingdoms, the Protozoa and Metazoa. In this system of classification the subkingdom Protozoa includes only the protozoa, which are one-celled organisms; all other animals, including man, are placed in the subkingdom Metazoa and possess many cells. In other systems of classification the protozoa are grouped in the separate kingdom Protista.

Phylum Protozoa: These microscopic animals were unknown until the invention of the microscope in about A.D. 1600. Because the single cell of these animals is very complex and performs the duties of the millions of cells in higher animals, it is best considered acellular or noncellular - as an organism whose body is equivalent to an individual cell, but is simply not subdivided into cells.

Phylum Mesozoa: The Mesozoa are small animals, less than 1/2 inch (1.3 cm) long having the simplest structure of any Metazoa. They are cellular endoparasites (living inside their hosts) of invertebrates, and have complicated life cycle involving sexual and asexual generations. Their mode of reproduction is unique among the Metazoa as it is by agametes. (Sporelike cells which develop directly into adults). They may be degenerate flatworms.

Phylum Porifera: The Porifera, commonly known as the sponges, are primitive, multicellular animals that live attached (sessile) to solid objects in water. Most of the 5,000 species live in salt water.

Phylum Coelenterata: The coelenterates are radially symmetrical marine animals with tissues, tentacles and unique, special cells (nematocysts) used for stinging with a paralyzing poison or for holding.

Phylum Ctenophora: The ctenophorans, commonly known as comb jellies and sea walnuts are passively floating (planktonic) animals that live in warm oceans. They have transparent bodies which superficially resemble jellyfishes and are biradially symmetrical with eight rows of ciliated plates (combs).

Phylum Platyhelminthes: The members of the platyhelminthes, commonly known as the flatworms, show a number of advances over the animals previously discussed. They have bilaterally symmetrical bodies with anterior (front) and posterior (tail) ends, dorsal (back) and ventral (underneath or belly) surfaces and nerve cords.

Phylum Nemertinea: The nemertineans, commonly known as the ribbon worms, have soft, flat, slender bodies that are unsegmented, bilaterally symmetrical and covered with a ciliated epidermis. They vary in length from 1/4 inch (0.6 cm) to an extreme of 80 feet (24 metres).

Phylum Acanthocephala: The Acanthocephala are parasitic, spiny-headed worms which vary in length from less than 1 inch up to 2 feet. The females are larger than the males. All are parasitic in the intestines of vertebrate animals.

Phylum Aschelminthes: The aschelminthes, like the acanthocephalans, include wormlike forms with a pseudocoel. The body may be flat or cylindrical and is covered by a tough, resistant cuticle. They have a complete and straight digestive system.

Phylum Entoprocta: The Entoprocta are characterized by the openings of the mouth and anus being inside a circlet of tentacles, a feature from which the name of this group is derived. All except one species live in salt water, either as solitary individuals or in colonies, and are attached to solid objects such as shells, marine worms or algae, by means of a stalk.

Phylum Bryozoa: Bryozoans, commonly known as the moss animalcules, appear similar to members of the phylum Entoprocta but have a true coelom lined with a peritoneal membrane. They are unsegmented, bilaterally symmetrical, triploblastic animals with a complete digestive tract. They are without circulatory, respiratory or nephridial systems.

Phylum Phoronidea: The phoronids are solitary animals that range in size up to 15 inches (38 cm) in length. Each animal lives in a tube which it secretes, the lower end of which is buried in the mud or sand bottoms of shallow seas.

Phylum Brachiopoda: The brachiopods, commonly known as lamp shells because of their resemblance to old Roman oil lamps, are small, solitary animals usually attached to the bottom of shallow seas. They look like clams at first glance, but the shells (valves) of lamp shells are on the top (dorsum) and bottom (ventrum) and the two are not alike;

clams have similar shells on either side.

Phylum Mollusca: The mollusks have the following common basic features: the absence of true segmentation; the presence of a thin membrane (the mantle) which secretes a shell; fundamental bilateral symmetry; triploblastic development; a complete digestive tract; a muscular ventral "foot"; a reduced coelom; and a mouth structure equipped with hard, horny (chitinous) teeth for rasping food.

Phylum Sipunculoidea: The sipunculids, commonly known as the peanut worms, live at the seashore in burrows lined with mucus. The name comes from a resemblance between peanuts and the smaller forms; however, some species are threadlike and may reach 16 inches (41 cm).

Phylum Echiuroidea: The echiuroids, a group of odd worms, have no common name. Most species live in burrows on the shore of tropical or temperate seas.

Phylum Annelida: The annelids, the best-known example of which is the common earthworm, are the segmented worms.

Phylum Pogonophora: The pogonophorans or beard worms are characteristically a group of deep-sea, threadlike worms living in stiff, chitinous tubes in the sea bottom.

Phylum Arthropoda: There are more species of animals in the phylum Arthropoda than in any other; perhaps nearly 1,000,000 species are included. One primary characteristic common to all arthropods is the jointed leg, a feature not found in any of the more primitive groups.

Phylum Chaetognatha: The phylum Chaetognatha includes about thirty species of arrow or glass worms. They have bristles about the mouth - a characteristic which gives rise to their name.

Phylum Echinodermata: The echinoderms are marine animals having radial symmetry of unsegmented bodies. They have an internal skeleton (endoskeleton), which is usually flexible, formed from calcareous plates.

Phylum Hemichordata: The hemichordates, commonly known as tongue worms, are slender, soft-bodied animals living on the floors of the sea. Some may reach a length of 6 or 7 feet (1.8 to 2.1 metres).

Phylum Chordata: The chordates possess the following three major features in common: 1) a hallow, dorsal nerve cord, 2) a notochord or longitudinal support, 3) gill slits at some time during their lives. A fourth characteristic, the ventral heart, is another important structure.

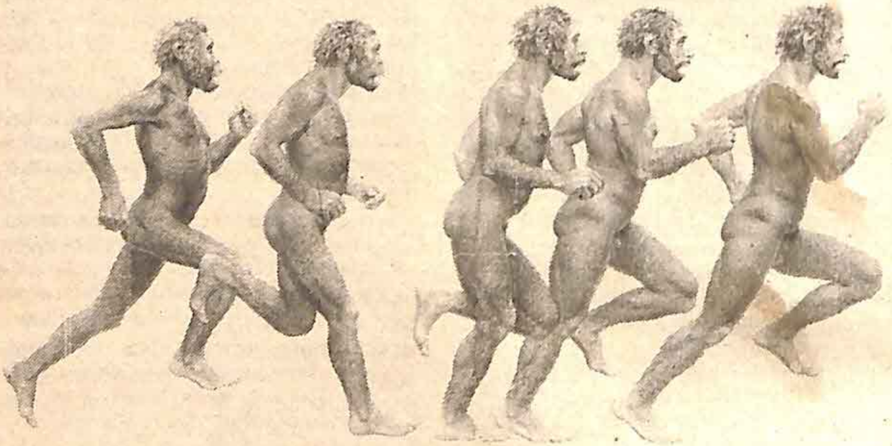
DESCENT OF MAN

Man has appropriated to himself the highest echelon in the biological hierarchy. But for all his pretensions of superiority he could not rid himself of many characteristics which he shared with lowlier species during the evolutionary process.

Biologically man belongs to the family of mammals and among mammals to a subfamily called the placental mammals. As a mammal he shares with other mammals, warm blood, hair and milk glands. As a placental mammal, his young are carried by the female for a long period prior to birth, attached by a placenta to the uterus, through which the child receives nourishment from the mother's bloodstream.

The *mammals* are today the most biologically advanced species and dominate the world of organic life. But more than 75 millions of years ago when gigantic reptiles ruled the Earth, the mammals were a frightened and insecure group. In order to survive and reproduce this early stock of hairy, warm-blooded creatures (of whom the tiny shrew is typical) had to keep to secret ways or to the dark, had to eat whatever could be found and had to carry their developing young within them rather than lay eggs where they could too easily be discovered (by other animals).

"They were on the run, driven more or less underground or to foraging at dusk or through the night–a desperate kind of life that demanded a high fertility and a quick replacement of generations", wrote Norman J. Berri.



Evolution: It took 4,000,000 years for 'afarensis' to develop into Homo Sapiens.

This explains the fantastic evolutionary progress that the mammals achieved. They changed from the tiny scurrying creatures they were into undaunted hunters lording it over all other species.

Among mammals, man belongs to the order of *Primates*. The Primates are distinguished by hands eminently adapted for grasping, an excellent vision, a keen sense of hearing but a poor sense of smell. The primates consist of monkeys, apes and man. The monkeys form a class by themselves, called the Lower Primates or Prosimians. Lemurs, lorises, tarsiers and tree shrews belong to this group.

Man and the apes together make up the Higher Primates or anthropoids. The anthropoids are in their turn divided into two groups, the *Pongidae* (apes) and the *Hominidae* (man). The hominidae differs from the pongidae in the shape and structure of the pelvis, legs and feet. This means that the hominidae can walk upright on their legs while pongidae have to use their hands as well for locomotion. The pongidae comprises four families–the gorilla and the chimpanzee of Africa and the gibbon and orang-utan of South-East Asia. The hominidae consists of only one family–man.

According to Charles F. Hockett, the Homo Erectus represents our earliest truly human ancestors. He says, "As soon as the hominids had achieved upright posture, bipedal gait, the use of hands for manipulating, for carrying and for manufacturing generalised tools and language, they had become men. The human revolution was over."

"The species Homo Erectus lived at some time during the Middle Pleistocene apparently in a large territory extending from Java and China to Europe, North Africa and may be to South Africa." This species was the first to achieve what may be called the *Homo Erectus Complex*. This consisted of six items: 1. achieving pre-language, 2. developing striding gait instead of shuffling gait, 3. successfully venturing out into open savanna or grassland, 4. engaging in more extensive and effective hunts with more co-operation, 5. developing more advanced carrying techniques, and 6. beginning to lose their hair.

The next turning point in evolution came around 50,000 years ago, in the warm interval when the ice was retreating in the Pleistocene age. Around this time, a new type of man, the *Homo Sapiens* (thinking man), began to crop up here and there in the form of various successful mutations. "By this time", says Charles F. Hockett, "the genus Homo consisted of a single, tightly connected, widespread but highly diverse species. All surviving hominids were heirs to the full erectus complex. The brain had grown approximately to its present size with some variation in average mass from one population to another."

The sapiens complex as it emerged showed four distinctive features: 1. a more efficient brain, 2. true language, 3. a flat face, and 4. exploitation of the kinds of articulatory motions that are now universal.

The new complex emerged within the framework of the erectus complex and did not undo any of its advantageous features. But it was a new key complex and gave rise to a new adaptive radiation, the second phase of human radiation. The sapiens complex spread just as the erectus complex did–by migration and gene flow.

The tempo, however, was almost unbelievable. The complex bestowed upon those who attained it an unprecedented capacity to co-operate, to move, to improve technology, to adapt and to absorb or eliminate less gifted competitors.

By about 40,000 years ago, there was no surviving group of hominids anywhere (with the possible exception of the *Neanderthals)* who had not absorbed the improved techniques. The Neanderthals persisted in Europe for many years after the sapiens complex became established. This tells us that the sapiens complex did not arise in Europe. But neither do we know where the sapiens complex originated. The Neanderthals lacked the flat baby face that had appeared elsewhere (among the sapiens) and their brains averaged somewhat larger than our own today or that of the Old World contemporaries of the Neanderthals.

GENES

Gregor Johann Mendel in 1885 showed that certain hereditary factors operate in all biological species. The Danish biologist Wilhelm Johannsen called these factors genes. The name stuck. It is now known that the genes not only transmit hereditary traits but also mastermind the entire process of life.

The genes are located in the chromosomes which are themselves situated in the nucleus of the cell. The genes, the chromosomes and the nucleus together constitute–to use a famous phrase of Churchill's - "a riddle wrapped in a mystery inside an enigma". The genes form the riddle, the chromosomes represent the mystery and the nucleus the enigma.

Much of the mystery surrounding the genes was cleared up with the discovery of the structure of the DNA (Deoxyribonucleic Acid) announced by J.D. Watson and Francis Crick in April 1953. In structure the DNA resembles a long rope ladder twisted around like a corkscrew. If we straighten the ladder, we shall see that the two sides of the ladder are long chains of two substances–sugars and phosphates–in repeated sequences. These form the backbone of the DNA. Their structure never varies.

The secret of the DNA lies in the rungs that connect the two sides of the ladder. These rungs form two parts or two half-rungs, each half being attached to one side of the ladder. These half-rungs can be one of four types of little molecules: *Adenine (A), Cytosine (C), Thymine (T) and Guanin (G).* Each of these half-rungs together with the attached segment of the ladder is known as a *nucleotide.* A half-rung on one side will only join with a specified partner on the other side. This predetermined arrangement for specific partners suggests that these little molecules form the letters of a fixed code or the words of a new language. Indeed, it has turned out that this is exactly what they are.

An *A* will form a rung only with a *T* and a *C* only with a *G*. So, the pairs *A-T, T-A, C-G* and *G-C* form in a way a four-letter alphabet with which messages can be spelt out. This four-letter alphabet makes up what is known as the *Genetic Code.* The genetic code is not only complex but also extensive. In 1977 Fred Sangar pointed out that the DNA code of a virus, when decoded by the computer came to a print-out of 15 metres. At this rate, the computer print-out for the human DNA would stretch to 16,000 km.

Enormously long strands of DNA intertwine within the core of living cells. So narrow and tightly coiled is this DNA that all the genes in all the cells in a human body would easily fit into a 1.25 cm cube. Yet if all these DNA strands are unwound and joined together it would stretch from the Earth to the Sun and back.

The genes control all functions of the cell and body growth. The two main events in the life of most cells are multiplication (by division) and synthesis of proteins. Both these operations are carried out on the basis of the blueprints coded in the genes.

Before a cell divides, the DNA ladder splits down the middle. The nucleotides *As* separate from the *Ts* and the *Cs* from the *Gs* much in the same way as a zipper is pulled apart. Now the separated nucleotides A, T, C, and G pick up appropriate partners from the free-floating nucleotides in the cell. Thus the split ladder becomes two whole ladders of DNA, each an identical copy of the other. Once the division of the DNA is completed the rest of the cells, other organelles also duplicate, ultimately producing two cells of the same type.

The replication of cells in growing bodies is followed by differentiation. Life in most species begins from a single fertilised egg or cell. The single cell becomes a double cell, then a quadruple and so on. At the same time different sets of genes work in different cells evolving specific physical traits, while specialised cells form different organs of the body, hands, legs, brain, heart etc. This process in known as *differentiation.*

Differentiation implies strictly regulated work. The cells concerned concentrate on the task in hand and cease all other activities and when the work is completed they stop working. This switching on and off of genetic activities is achieved by the presence of two molecules attached to the genes - *inducers* and *repressors.*

The genes which we inherit from our parents determine our *hereditary* traits. Hereditary characteristics are not transmitted in a package, as it were. Different genes are responsible for different inherited traits. Each gene functions independently of other genes in this respect. The genes for a particular trait are found at particular locations in the chromosomes.

Chromosomes are thread-like bodies found in the nucleus of the cell. They are always found in pairs. Chromosomes vary in number according to species. The fruitfly, for example, has 4 pairs or 8 chromosomes in all, and the garden pea has 7 pairs (14 in all). Mice have 20 (40) and humans 23 (46).

Our 46 chromosomes arranged in single file would measure more than 2 m. Yet they are contained in the nucleus which is about forty-thousandths of an inch. The nucleus is filled with nucleic acids of two kinds *Ribonucleic Acid,* RNA and *Deoxyribonucleic Acid,* DNA. The DNA is concentrated in the chromosomes while RNA is seen concentrated in the nucleoli, both of which are in the nucleus.

One of the primary functions of the cell is to manufacture proteins. The human body requires thousands of different proteins. All these are built from 20 amino acids. Each gene (or a distinct segment of the DNA strand) contains instructions for making a specific protein.

The instructions are coded into precise sequence of nucleotides. Just as we can change the meaning of a sentence by rearranging the words, the genes can spell an immense vocabulary of proteins using only the four nucleotides of the DNA - A, T, C. and G. All the A, T, C, and G in one set of human chromosomes (46 in number) can be put together in billions of different ways.

One geneticist, H. J. Muller, has estimated that the number of different ways of putting together all the As, Ts, Cs, and Gs would be the figure 256 followed by 2.4 billion zeros. This is a figure that boggles the imagination. It would be a lifetime job if any one sat down to write out that figure in full. Or, just try it.

In protein synthesis the DNA is assisted by the RNA (Ribonucleic Acid). RNA is a single strand as against the double strand of the DNA and is different in composition. That is to say, the RNA has *Uracil (U)* in the place of DNA's *Thymine (T)*. RNA is of two kinds, messenger RNA (mRNA) and transfer RNA (tRNA). When a protein is to be prepared the concerned gene opens. RNA (mRNA) nucleotides attach themselves to the gene and go on growing like a ribbon. This ribbon is the mRNA. It carries the code for making the specific protein.

Proceeding from the gene inside the nucleus the mRNA moves out into the cytoplasm looking for a ribosome for the assembly of the particular protein. The sequence of As, Us, Cs and Gs on the messenger RNA forms into groups of 3-letter words like *ACU, CGG, CCU* etc. These 3-letter words are called *codons.*

The message carried by the messenger RNA (mRNA) is transferred to the transfer RNA (tRNA). The ribosome with the assistance of the tRNA proceeds to collect the amino acids indicated in the message from the chemicals stored in the cytoplasm. Here, the amino acids are linked together in the sequence given in the code and the synthesis of that particular protein is completed.

Every cell is equipped with the material and the knowhow to build a full adult of the species. It is therefore possible to reproduce any organism if a living cell from any part of the organism is available. This was proved in the fifties by F.C. Steward of Cornell University. He placed tiny pieces from carrot slices in glass flasks containing nutritive solutions. He revolved the flasks slowly and released free cells from the carrot pieces. These free cells were left to grow by themselves. They grew into complete carrot plants. An English scientist J. B. Gurdon carried out another experiment with frog's eggs. He destroyed the nuclei in the eggs. The frog eggs were then filled with nuclei taken from a tadpole's intestinal tissues. The eggs developed into exact replicas of the donor tadpole. This opens up the possibility of cloning human beings themselves by the same process.

Cloning is asexual reproduction. A male and a female need not unite to produce an offspring. But in cloning, a cell from a male will only produce a male and vice versa. This handicap is compensated by the fact that the offspring will be an exact replica of the donor.

GENETIC ENGINEERING

As biologists learned more and more of the genetic code, they started investigations to see if the code can be permanently changed by manipulating the genes. All attempts in this regard have been collectively categorised as *Genetic Engineering.*

Genetic Engineering includes fusions, deletions, inversions and transpositions of genes. The most celebrated of all these attempts is the hybridisation of genes, that is grafting a piece of the DNA of one organism to the DNA of another. Research in this technique, briefly known as *Re-combinant DNA,* was facilitated by the discovery of the plasmids and of certain enzymes.

Pioneer attempts in this direction have been so successful that the technique has emerged as a commercial proposition. *Time* writes that this technique promises to be *"the technology of the 1980s, just as plastics were in the 1940s, transistors in the 1950s, computers in the 1960s and micro-computers in the 1970s."*

The technique involves micro-surgery. Precision tools for this surgery are provided by certain enzymes which Paul Berg calls molecular scalpels and sutures. One of these enzymes called Restriction Enzyme can cut the DNA at any specific point required and graft it on to a foreign DNA. The sliced-out gene must have sticky ends shaped like mortises in order to anneal it firmly to the foreign DNA. This is also done by the Restriction Enzyme. Given these conditions it is possible to re-combine DNAs as diverse as those of a bacterium and an animal.

The first successful attempt at grafting a piece of DNA to a foreign DNA was made by

Paul Berg of Stanford University. He took his initial supply of DNA from a well known laboratory organism *SV 40* (short for simian virus 40). Its genetic structure is fairly simple with about 7 genes in all, compared to the thousands of genes that crowd the cells of higher organisms. To insert this genetic material into a bacterium, Berg used as his carrier (vector) another variety of virus called the *lamda phage*, which preys on bacteria.

The first step in the operation was to cut out a slice of SV 40's DNA molecule. This was done by the use of Restriction Enzyme. As the enzyme cut the double-stranded DNA, it left one strand jutting out at both ends. These were sticky ends and were to be inserted into the foreign DNA which was similarly cleaved with one strand standing out at each end. When the cut ends were put together the single strands joined up to become double strands and the cleavage in the DNA ring was closed up. When this was done Berg had achieved a scientific first–combining the DNAs of two species of virus into a single DNA molecule. Berg shared the 1980 Nobel Prize for Chemistry for this achievement.

The process of re-combination is as follows: An E. coli bacterium is broken up by a detergent and the pieces are spun in a centrifuge to isolate the plasmids. The plasmid is then immersed in a restriction enzyme which cleaves the plasmid at the specified place. The same enzyme is used to snip off a piece of DNA from a virus. The foreign gene (from the virus) is inserted into the cleavage of the bacterial plasmid and a re-combined molecule is formed. The new hybrid plasmid is then introduced into a bacterium. The bacterial cell divides and with it the plasmid also divides and multiplies.

"Gene splicing," says Time, "is the most powerful and awesome skill acquired by man since the splitting of the atom. It is an unparalleled exploratory tool for examining and in the process changing, the complicated machinery of heredity. If a gene of unknown function is inserted into a bacterium, it can act as a probe that lets scientists see precisely what it does. By such techniques researchers will finally speed up the formidable task of identifying, locating and analysing every one of the more than 100,000 genes found in the human cell."

The Recombinant DNA technique opens out many avenues of beneficial research. First comes the production of therapeutic proteins like interferon, insulin, hormones etc. Interferon is a powerful antiviral agent made by the human body. But its supply is very limited considering the demand. Its extraction from blood cells and other human tissues is costly too.

A single injection of interferon costs as much as 150 dollars. If however, bacteria can be programmed to produce it (as has been done by Weismann early in 1981) the supply of interferon will be plentiful and cheap, coming down to a maximum of 1 dollar per shot. The reason is that as a manufacturing unit bacteria are unrivalled-.......Mechanical assembly lines, however sophisticated, can never compete with them. Replicating every 20 minutes, a single bacterium can produce millions of bacteria in 24 hours all of them turning out interferon in unbroken succession.

The same is the case with insulin, growth hormones, vaccines etc. Already genetically engineered bacteria have emerged as suppliers of scarce drugs like en*zyme urokinase* used to dissolve blood clots and *betaendorphin,* one of brain's own pain killers. The human growth hormone used to treat dwarfism, formerly in short supply, is now being turned out by bacteria tailored to produce it.

The case of insulin is slightly different. Insulin was being extracted from the pancreases of cows and pigs. This was enough supply. But it turned out that some people were allergic to animal insulin. Now, bacteria specially programmed for the purpose are producing insulin which avoids allergies.

DNA Tests Helps Re-union

The revolutionary technique of DNA fingerprint tests enabled two Indian offspring to join their parents in Britain after 20 years of separation in 1990.

The family's reunion came nearly two years after the DNA tests proved that Mukhtiar Singh, 22, and Sukhjit Kaur, 20, were the natural children of Mr. Gurbux Singh Gill and Mrs. Jasmail Kaur of London.

FOOD AND NUTRITION

Human diet is not restricted to any special category of food. Man can and does eat a variety of foods, of both plant and animal origin. Variety is, for him, the spice of life, more so in foods, than in anything else. This natural desire for variety is justified by the fact that no single food provides us with all the nutrients that we need.

Cereals, like rice or wheat which form the staple food of mankind, supply us only with a fraction of our nutritional requirements. We have to supplement cereals with other foods that provide plenty of fats and proteins and minor quantities of a number of vitamins and minerals. This means that the larger our diet sheet, the better our health will be. This will become evident, if we analyse what nutrients our foods contain and in what proportion.

The nutrients found in foodstuffs may broadly be classified as (1) Carbohydrates, (2) Fats, (3) Proteins, (4) Minerals, (5) Vitamins and (6) Water. Proteins, fats and carbohydrates are called Macro Nutrients.

Protein Value of Indian Foods

Foodstuffs	Biological value*	Protein efficiency ratio
Rice	68	2.2
Wheat	65	1.5
Maize	59	1.2
Bengal gram	68	1.7
Red gram	57	1.5
Groundnut	55	1.7
Gingelly seeds	62	1.8
Egg	94	3.9
Milk	84	3.1
Meat	74	2.3
Fish	76	3.5

* Biological value is the ratio of nitrogen retained to nitrogen consumed.

Proteins (from the Greek word Proteios meaning first) are the most versatile elements in the body. They are the chief substances of the cells of the body. They form important constituents of muscles and other tissues and vital fluids like blood. Enzymes, which assist in the digestion of food, and anti-bodies which are the body defences against infections are also mainly protein in nature.

The nutritive value of protein depends on the essential *amino acid* composition. Amino acids are the bricks with which tissue protein is built and replaced. There are some 20 amino acids commonly found in dietary proteins. Of these, 10 amino acids can be synthesised by the body itself, whether by mutual conversion among amino acids or from non-protein sources. But 10 amino acids cannot be so synthesised and have to be supplied through diet. These are called *essential amino acids.* Adults require 8 essential amino acids while children require 9 or 10.

Fat, like protein, is a necessary ingredient in diet and is of value to the body in a number of ways. It is a concentrated source of energy and supplies per unit weight more than double the energy furnished by either protein or carbohydrates. Some fats, especially vegetable oils, provide what are called *essential fatty acids,* linoleic and arachidonic acids, to the body.

Fats that circulate in the blood are of many types–triglycerides, phospholipids, etc. The quantity and quality of fat consumed affects the level of *cholesterol* in the blood. Some fats like groundnut oil, sesame oil or sunflower oil which contain a high proportion of poly-unsaturated fatty acids do not increase blood cholesterol levels greatly. Others like coconut oil, butter, ghee and hydrogenated vegetable oils (vanaspati) contain high proportions of *saturated fatty acids* and greatly increase cholesterol levels. It is also found that consumption of smaller amounts of fat at different times causes less increase of cholesterol than a large amount of fat taken at a time.

Carbohydrates include every kind of starch and sugar. Grainfoods are largely composed of starch and foodstuffs like cane sugar and glucose are pure carbohydrates. They form the main source of energy for the body. Being a cheap source of energy, carbohydrates form the bulk of Indian diet.

A balanced diet simply means a diet that will supply all the nutrients necessary for the growth and development of the body. In India, a balanced diet has become an imperative since most Indians consume foods that provide more carbohydrates and fats than proteins.

The table below gives the amounts of the various foods that will make up a balanced diet for the average Indian. The quantity of food varies according to age and the type of work.

Composition of a Balanced Diet

	Vegetarian	Non-vegetarian	Vegetarain		Non-vegetarian	
Foodstuffs	Amount (g)		Calories	Protein (g)	Calories	Protein (g)
Cereals	325	325	1150	29	1150	29
Dal & Nuts	100	50	320	22	160	11
Milk	200 (ml)	100 (ml)	235	8	117	4
Root Vegetables	150	150	145	2	145	2
Other Vegetables	100	100	50	3	50	3
Leafy Vegetables	100	100	"	"	"	"
Fruits	100	100	80	-	80	-
Egg	(1 no.)	50	-	-	85	6
Meat/Fish	-	100	-	-	195	18
Fat	50	50	450	-	450	-
Sugar/ Jaggery	30	30	120	-	120	-
Total			2550	64	2552	73

Vitamins and minerals comprise what are called micro nutrients as distinguished from proteins, fats and carbohydrates which are called macro nutrients.

Vitamins can be broadly divided into fat-soluble and water-soluble vitamins. Vitamin A, D, E and K are fat-soluble vitamins. Vitamin C and B (including Vitamins B_1, B_2 and other B-Group vitamins) are water-soluble.

The vitamins are necessary auxiliaries in metabolism. They combine with specific proteins, as parts of the various oxidative enzyme systems which are concerned with the breakdown of carbohydrates, proteins and fat in the body. Thus, they are intimately involved in the mechanism which releases energy, carbon dioxide and water as the end products of metabolism.

A large number of minerals is present in the body and performs a variety of functions. Minerals account for about 4 per cent of the body weight. Calcium and phosphorus form about three-fourths of the mineral elements. Five other minerals–potassium, sulphur, sodium, chlorine and magnesium–account for most of the rest. Many elements are present in such minute quantities that they are called trac*e elements or micro-nutrients.*

Water is a vital constituent of diet. An average man contains about 45 litres of water (70 per cent of the body weight). The cells contains 30 litres. Three litres are in the plasma of the blood, where the suspended cells make a total volume of blood upto 5 litres. The remaining 12 litres (45–33) fill the space between groups of cells. This is tissue fluid which bathes all the cells of the body.

Water is absolutely necessary for the digestion and absorption of the foods taken in. It is the great solvent and neutraliser in the body. It is the substance in which bodily chemical reactions take place. Water is the carrier or transporting medium for all nutrients and body substances. It regulates body temperature. It is the great purifying agent in the body and removes waste materials in the form of tear, perspiration, urine and faeces. Watery substances act as lubricants in the body, especially in the joints. It is a part of all body tissues and fluids.

Acidosis, alkalosis and dehydration, oedema, fever, shock, uraemia and constipation are some of the clinical signs of inadequate salt and water in the body. *Sources:* The body obtains water mainly from the fluids we drink, from the solids we eat and also from

Calory Value of Foods

FOOD	AMOUNT	CALORIES
Apple	1	70
Apricots	3	50
Beans	1/2 cup	15
Bread (white)	1 slice	70
Broccoli	1 cup	20
Boiled cabbage	1/2 cup	15
Cooked carrots	1/2 cup	20
Bran Cereal	1 ounce	70
Corn	1/2 cup	70
Cucumber	1	43
Fresh Mushrooms	1/2 kg	125
Orange	1	65
Frozenpeas	1/2 cup	60
Pears	1	100
Potato	1	90
Cooked spinach	1/2 cup	20
Vegetable juice	1/2 cup	20

the oxidation of energy foods. Fats and carbohydrates are oxidised in the body to carbon dioxide and water.

Cereals like rice, wheat and millets, ragi, cholam and bajra form the main food in India. Cereals are rich in carbohydrates. They generally contain 6 to 12 per cent protein, but these proteins are usually deficient in the essential amino acid *lysine*. Rice protein, however, is richer in *lysine* than other cereals.

Most cereal grains are poor in mineral content and rice is especially poor. Ragi is, however, rich in minerals, especially in calcium, and bajra in iron. Whole cereal grains are important sources of B-vitamins but in milling, rice loses the outer layers containing thiamine. Parboiled rice, even when milled, does not lose its thiamine content. Except yellow maize, which contains some amounts of carotene, no other cereal grain is a source of vitamin A or C.

Pulses or legumes as they are called, are rich in proteins. Pulse proteins, however, are of relatively low biological value because of the deficiency of the essential amino acid *methionine* but they are rich in *lysine*. Pulses are not rich sources of minerals but they are rich in B-vitamins. Dried pulses do not contain vitamin C but if they are germinated significant amounts of vitamin C are generated.

Most of the green leafy vegetables are rich sources of calcium, iron, carotene, vitamin C, riboflavin and folic acid.

Roots and tubers are rich in carbohydrates. But roots like carrot are also rich in carotene (Vitamin A); Those like potato contain significant amounts of vitamin C, while roots like tapioca contain calcium also.

Other vegetables are those which do not fall into the category of leafy vegetables or root vegetables. These vegetables are shoots, like lady's finger, cucumber, tomato, bitter gourd, snake gourd, brinjal, etc. They are fairly good sources of vitamins and minerals.

Nuts and oil seeds are good sources of fat (oil), protein and minerals and fair sources of vitamins: eg., groundnut and cashewnut.

Fruits in general are rich in vitamin C, particularly, gooseberry (amla), guava (perakka) and citrus fruits. Yellow fruits like mango and papaya contain carotene and dried fruits like dates are sources of iron.

Fish and sea foods are rich sources of protein, B-vitamins and also minerals, especially calcium.

Fleshy foods are rich sources of protein and B-vitamins, especially B_{12}. They are generally deficient in vitamin A, but liver is an exception.

Egg is a rich source of all nutrients except vitamin C. Its protein is of high quality.

Milk & Milk products. Milk is an ideal food for infants and young children and a good supplementary food for all. It contains all vital nutrients, except vitamin C and iron.

Food is the only source of energy for humans. This means that our dietary sheet must change according to our requirements of energy and meals must be planned.

Good food selection, the cornerstone of good nutrition, must be learned as unfortunately there is no automatic built-in mechanism in human beings to direct the choice of foods which build healthy bodies and which keep them running satisfactorily from day to day.

The question what food we should eat and how much, depends on the amount of energy we need. Food energy is measured in terms of heat units called calories. A physiological calorie, also called large calorie or kilocalorie (abbreviated as Kcal), is the amount of heat necessary to raise the temperature of one kilogram of water by one degree centigrade. One gram of protein or carbohydrate yields 4 calories. One gram of fat yields 9 calories while the same quantity of alcohol yields 7.

The following tables show the height-weight ratio of Adolescents and Adults.

Adolescents: Height-Weight Ratio

Boys			*Girls*	
Height (cm)	*Weight (kg)*	*Age (yrs)*	*Height (cm)*	*Weight (kg)*
112.4	19.2	5+	112.5	18.6
118.8	21.9	5+	117.8	20.5
123.2	24.3	7+	123.2	23.8
127.9	26.1	8+	127.2	26.0
133.3	29.2	9+	132.5	29.0
138.0	31.0	10+	138.2	32.6
142.7	34.0	11+	145.1	36.3
148.4	37.8	12+	151.5	42.5
155.0	42.4	13+	153.8	43.9
162.6	47.3	14+	154.5	45.0
165.5	51.1	15+	155.8	47.3
168.9	54.8	16+	155.8	49.0

Adults: Height-Weight Ratio

Men Weight in kg				Women Weight in kg			
Ht	Age			Ht	Age		
cms	20	35	50	cms	20	35	40
148	42.7	47.6	50.9	148	38.6	44.0	47.1
153	45.4	50.4	53.5	150	40.3	44.8	47.7
158	48.6	53.5	56.3	153	41.9	46.6	49.5
163	51.1	56.3	59.4	155	42.8	47.7	50.1
168	54.0	60.1	63.7	158	44.9	49.5	52.1
173	58.1	64.0	68.3	160	46.0	50.6	53.0
178	61.9	68.5	72.4	163	47.3	52.1	54.9
183	66.0	73.3	77.8	165	49.1	54.1	57.3

INVENTIONS

Scientific inventions and discoveries are important because they lead to the creation of mechanisms and artifacts which improve or easen our living conditions. However, there is often a long time lag before the inventions are transformed into working utilities.

Reviewing some 46 discoveries between 1900 and 1950, *A History of Technology* edited by Trevor I. William points out that the longest intervals – 50 to 80 years – were taken up by the fluorescent lamp and the cotton picker and the shortest – one year – by Freon refrigerants.

Inventions and discoveries come about sometimes by accident but mostly by design. Roentgen discovered X-ray by accident in 1895 but the Curies laboriously pursued the radium and discovered it eventually in 1898. Most of the discoveries in the 20th century were the results of purposeful investigations and experiments, though some like penicillin were discovered accidentally.

Accidental discoveries are, in fact, few and far between but even then only a scientist of unusual acumen can identify it as a discovery in the first instance. Others might have noticed the same thing before to no purpose. The classic instance is the Archimedes Principle. Thousands of people would have noticed that when they got into a full tub some water flowed out. But Archimedes, alone among the thousands, could see a principle in it.

Many inventions have been made under the compulsive necessities of war. The Nazis developed rocketry and ballistic missiles to destroy England. America made the atom bomb to crush Japan. The Allies developed Radar and Sonar to protect themselves.

All these inventions have turned out to be quite beneficial in peacetime. Rocketry and missiles opened the way for space exploration and the epochal landing of men on the Moon. Atomic power is now being harnessed for peacetime uses. Radar and Sonar have been helpful in a number of ways. Sonar, for instance, has made commercial fisheries safer and more productive.

Invention	*Date*	*Inventor*	*Country*
Adding Machine	1623	Wilhelm Schickard	Germany
Aeroplane	1903	Orville & Wilbur Wright	U.S.A.
Airship (non-rigid)	1852	Henri Giffard	France
Airship (rigid)	1900	G.F. von Zeppelin	Germany
Bakelite	1907	Leo H. Baekeland	Belgium
Balloon	1783	Jacques & Joseph Montgolfier	France
Ball-Point	1888	John J. Loud	U.S.A
Barometer	1644	Evangelista Torricelli	Italy
Battery (Electric)	1800	Alessandro Volta	Italy
Bicycle	1839-40	Kirkpatrick Macmillan	Britain
Bicycle Tyres (pneumatic)	1888	John Boyd Dunlop	Britain
Bifocal Lens	1780	Benjamin Franklin	U.S.A.
Bunsen Burner	1855	R. Willhelm von Bunsen	Germany
Burglar Alarm	1858	Edwin T. Holmes	U.S.A.
Car (steam)	c. 1769	Nicolas Cugnot	France
Car (Petrol)	1888	Karl Benz	Germany
Carburettor	1876	Gottlieb Daimler	Germany
Carpet Sweeper	1876	Melville R. Bissell	U.S.A.
Cash Register	1879	James Ritty	U.S.A.
Cellophane	1908	Dr. J. Brandenberger	Switzerland
Celluloid	1861	Alexander Parkes	Britain
Cement (Portland)	1824	Joseph Aspdin	Britain
Chronometer	1735	John Harrison	Britain
Cinema	1895	Nicolas & Jean Lumiere	France
Clock (mechanical)	1725	I-Hsing & Liang Ling-Tsan	China
Clock (Pendulum)	1656	Christian Huygens	Netherlands
Dental Plate	1817	Anthony A. Plantson	U.S.A.
Dental Plate (Rubber)	1855	Charles Goodyear	U.S.A.
Diesel Engine	1895	Rudolf Dieself	Germany
Disc Brake	1902	Dr. F. Lanchester	Britain
Dynamo	1832	Hypolite Pixii	France
Electric Blanket	1883	Exhibited at the Vienna Exhibition	
Electric Flat Iron	1882	H.W. Seeley	U.S.A.
Electric Lamp	1879	Thomas Alva Edison	U.S.A.
Electric Motor (DC)	1873	Zenobe Gramme	Belgium
Electric Motor (AC)	1888	Nikola Tesla	U.S.A.
Electro-Magnet	1824	William Sturgeon	Britain
Electronic Computer	1824	Dr. Alan M. Turing	Britain
Film (moving outlines)	1885	Louis Prince	France
Film (talking)	1922	J. Engl, J. Mussolle & H. Vogt	Germany
Film (musical sound)	1923	Dr. Le de Forest	U.S.A.
Fountain Pen	1884	Lewis E. Waterman	U.S.A.
Galvanometer	1834	Andre-Marie Ampere	France
Gas Lighting	1792	William Murdock	Britain
Glass (stained)	c. 1080	Augsburg	Germany
Glassware	c. 1500 B.C.	Egypt and Mesopotamia	
Glider	1853	Sir George Cayley	Britain
Gramophone	1878	Thomas Alva Edison	U.S.A.
Gyro-compass	1911	Elmer A. Sperry	U.S.A.
Helicopter	1924	Etienne Oehmichen	France
Hovercraft	1955	C.S. Cockerell	Britain

Count Alessandro Volta (1745-1827), who invented the electric battery demonstrates it to Napoleon Bonaparte in 1801. The volt is named after him.

Iron Working (Carbonized)	c. 1200 B.C.	Cyprus & N. Palestine	
Jet Engine	1937	Sir Frank Whittle	Britain
Laser	1960	T. H. Maimah	U.S.A.
Launderette	1934	J.F. Cantrell	U.S.A.
Lift (Mechanical)	1852	Elisha G. Otis	U.S.A.
Lightning Conductor	1752	Benjamin Franklin	U.S.A.
Linoleum	1860	Frederick Walton	Britain
Locomotive	1804	Richard Trevithick	Britain
Loom, power	1785	E. Cartwright	Britain
Loudspeaker	1900	Horace Short	Britain
Machine Gun	1718	James Puckle	Britain
Maps	c. 3800 B.C.	Sumeria (clay tablets of river Euphrates)	

Margarine	1869	Hippolyte M. Mouries	France
Match, safety	1826	John Walker	Britain
Microphone	1876	Alexandedr Graham Bell	U.S.A.
Micro-processor	1971	Robert Noyce & Gordon Moore	U.S.A.
Microscope	1590	Z. Janssen	Netherlands
Motor Cycle	1885	G. Daimler of Cannstatt	Germany
Neon Lamp	1910	Georges Claude	France
Night Club	1843		France
Nylon	1937	Dr. Wallace H. Carothers	U.S.A.
Paper	A.D. 105		China
Parachute	1797	A.J. Garnerin	France
Parchment	c. 1300 B.C.		Egypt
Parking Meter	1935	Carlton C. Magee	U.S.A.
Pasteurization	1867	Louis Pasteur	France
Photography (on metal)	1826	J.N. Niepce	France
Photography (on paper)	1835	W.H. Fox Talbot	Britain
Photography (on film)	1888	John Carbutt	U.S.A.
Porcelain	851	Earliest report from China	
Potter's Wheel	c. 6500 B.C.	Asia Minor	
Printing Press	c. 1455	Johann Gutenberg	Germany
Printing (rotary)	1846	Richard Hoe	U.S.A.
Propeller (ship)	1837	Francis Smith	Britain
Pyramid	c. 2685 B.C.		Egypt
Radar	1922	A.H. Taylor & Leo C. Young	U.S.A.
Radio Telegraphy	1864	Dr. Mahlon Loomis	U.S.A.
Radio Telegraphy (Trans Atlantic)	1901	G. Marconi	Italy
Rayon	1883	Sir Joseph Swan	Britain
Razor (electric)	1931	Col. Jacob Schick	U.S.A.
Razor (safety)	1895	King C. Gillette	U.S.A.
Record (long-playing)	1948	Dr. Peter Goldmark	U.S.A.
Refrigerator	1850	James Harrison & Alexander Catlin	U.S.A.
Rubber (latex foam)	1928	Dunlop Rubber Co.	Britain
Rubber (Tyres)	1846	Thomas Hancock	Britain
Rubber (vulcanised)	1841	Charles Goodyear	U.S.A.
Rubber (waterproof)	1823	Charles Macintosh	Britain
Rubik Cube	1975	Prof. Emo Rubik	Hungary
Safety Pin	1849	Walter Hunt	U.S.A.
Scotch Tape	1930	Richard Drew	U.S.A.
Self-starter	1911	Charles F. Kettering	U.S.A.
Sewing Machine	1829	Barthelemy Thimmonnier	France
Ship (sea-going)	c. 7250 B.C.	Grecian ships	
Ship (steam)	1775	J.C. Perier	France
Ship (turbine)	1894	Hon. Sir C. Parsons	Britain
Silk Manufacture	c. 50 B.C.		China
Skyscraper	1882	W. Le Baron Jenny	U.S.A.
Slide Rule	1621	William Oughtred	Britain
Spectacles (convex)	1289		Venice, Italy
Spinning Frame	1769	Sir Richard Arkwright	Britain
Spinning Jenny	1764	James Hargreaves	Britain
Spinning Mule	1779	Samuel Crompton	Britain
Steam Engine	1698	Thomas Savery	Britain
Steam Engine (piston)	1712	Thomas Newcomen	Britain

Steam Engine (condenser)	1765	James Watt	Britain
Steel Production	1855	Henry Bessemer	Britain
Steel (stainless)	1913	Harry Brearley	Britain
Submarine	1776	David Bushnell	U.S.A.
Tank	1914	Sir Ernest Swington	Britain
Telegraph	1787	M. Lammond	France
Telegraph Code	1837	Samuel F.B. Morse	U.S.A.
Telephone (Imperfect)	1849	Antonio Meucci	Italy
Telephone (Perfected)	1876	Alexander Graham Bell	U.S.A.
Telescope	1608	Hans Lippershey	Netherlands
Television (mechanical)	1926	John Logie Baird	Britain
Television (electronic)	1927	P.T. Farnsworth	U.S.A.
Terylene	1941	J.R. Whinfield, J.T. Dickson	Britain
Thermometer	1593	Galileo Galilei	Italy
Transformer	1831	Michael Faraday	Britain
Transistor	1948	Bardeen, Shockley & Brattain	U.S.A.
Typewriter	1808	Pellegrine Tarri	Italy
Washing Machine (elec.)	1907	Hurley Machine Co.	U.S.A.
Watch	1462	Bartholomew Manfredi	Italy
Water Closet	1589	Designed by J. Harrington	Britain
Welder (electric)	1877	Elisha Thomson	U.S.A.
Wheel	c. 3300 B.C.	Sumerian civilization	
Windmill	c. 600	Persian corn grinding	
Writing	c. 3500 B.C.	Sumerian civilization	
X-ray	1895	Wilhelm K. Roentgen	Germany
Zip Fastener	1891	W.L. Judson	U.S.A.

(Source: Guinness Book of Answers)

ELEMENTS

An element may be defined as "a substance which cannot be broken down to yield simpler substances by ordinary chemical methods". The elements are the basic substances from which all others are built up by chemical combinations.

Elements found in nature or naturally occurring elements number 92, ranging from Hydrogen, the lightest element (Element 1) to Uranium, (Element 92) the heaviest element. One element Plutonium (Element 94) is found in minute quantities in the ores of Uranium and Thorium.

All elements heavier than Uranium are man-made and are called *Transuranics*. They are produced either in nuclear reactors or accelerators or isolated from the debris of hydrogen bomb explosions. The first of such elements is Neptunium (Element 93) discovered in 1940. The latest is Element 109 discovered in 1982 by the Institute for Heavy Ion Research (GSL) at Darmstadt (West Germany).* Elements up to 103 (1961) are included in the table given below.

All man-made elements decay quickly. Element 109, for instance, survives as such for only five-thousandth of a second and turns into Element 107 which after a short time emits an alpha particle and becomes Element 105. Next one of the protons in the nucleus is transformed into a neutron, emitting a positive electron (Positron) in the process and becomes Element 104. This element splits into two and the process of decay is halted.

Elements are numbered according to the number of protons in their atomic nuclei. But the atomic nucleus also contains neutrons which add to the mass of the atom and can affect its stability and radio activity. The atoms of the same element may contain different numbers of neutrons. These are called their isotopes. It is calculated that about 8000 isotopes may exist for the known atoms. Actually only 2000 are known today.

Elements and Symbols		*Atomic Number*	*Atomic Weight*	*Discoverer*	*Date*
Actinium	Ac	89	227.0	A. Debierne	1899
Aluminium	Al	13	27.0	F. Wohler	1827
Americium	Am	95	243	G. Seaborg & others	1944
Antimony	Sb	51	121.8	B. Valentine	1604
Argon	A	18	39.9	W. Ramsay and J. Rayleigh	1894
Arsenic	As	33	74.9	A. Magnus	(?) 1250
Astatine	At	85	210	E. Segre & others	1940
Barium	Ba	56	137.3	H. Davy	1808
Berkelium	Bk	97	249	S. Thompson & others	1949
Beryllium	Be	4	9.0	N. Vauquelin	1798
Bismuth	Bi	83	209.0	C. Geoffrey the Younger	1953
Boron	B	5	10.8	H. Davy	1808
Bromine	Br	35	79.9	A. Balard	1826
Cadmium	Cd	48	112.4	F. Stromeyer	1817
Calcium	Ca	20	40.1	H. Davy	1808
Californium	Cf	98	251	S. Thompson & others	1950
Carbon	C	6	12.0	....	Prehistoric
Cerium	Ce	58*	140.1	Berzelius, Hislinger & Klaproth	1803
Caesium	Cs	55	132.9	R. Bunsen & G. Kirchhoff	1860
Chlorine	Cl	17	35.5	K. Scheele	1774
Chromium	Cr	24	52.0	N. Vauquelin	1797
Cobalt	Co	27	58.9	G. Brandt	c. 1735
Copper	Cu	29	63.5	....	Prehistoric
Curium	Cm	96	248	G. Seaborg & others	1944
Dysprosium	Dy	66*	162.5	L. deBoisbaudran	1886
Einsteinium	E	99	254	A. Ghiorso & others	1953
Erbium	Er	68*	167.3	C. Mosander	1839
Europium	Eu	63*	152.0	E. Demarcay	1896
Fermium	Fm	100	253	A. Ghiorso & others	1952
Fluorine	F	9	19.0	H. Moissan	1886
Francium	Fr	87	223	M. Perey	1939
Gadolinium	Gd	64*	157.3	J. C. de Marignac	1880
Gallium	Ga	31	69.7	L. de Boisbaudran	1875
Germanium	Ge	32	72.6	C. Winkler	1886
Gold	Au	79	197.0	....	Prehistoric
Hafnium	Hf	72	178.5	D. Coster & G. De Hevesy	1923
Helium	He	2	4.0	J. C. P. Janssen & N. Lockyer	1868
Holmium	Ho	67*	164.9	J. Soret & M. Delafontai	1878
Hydrogen	H	1	1.0	H. Cavendish	1766
Indium	In	49	114.8	F. Reich & T. Richter	1863
Iodine	I	53	126.9	B. Courtois	1811
Iridium	Ir	77	192.2	S. Tennant	1803
Iron	Fe	26	55.9	....	Prehistoric
Krypton	Kr	36	83.8	W. Ramsay & M. Travers	1898
Lanthanum	La	57*	138.9	C. Mosanter	1839

Lawrencium	Lw	103	257.0	A. Ghiorso & others	1961
Lead	Pb	82	207.2	....	Prehistoric
Lithium	Li	3	6.9	A.. Arivedson	1817
Lutetium	Lu	71*	175.0	G. Urbain	1907
Magnesium	Mg	12	24.3	Recognized by J. Block	1755
Manganese	Mn	25	54.9	Recognized by K. Scheele	1774
Mendelevium	Mv	101	256	A. Ghiorso & others	1955
Mercury	Hg	80	200.6	....	Prehistoric
Molybdenum	Mo	42	95.9	K. Scheele	1778
Neodymium	Nd	60*	144.2	C. Von Welsbach	1885
Neon	Ne	10	20.2	W. Ramsay & M. Travers	1898
Neptunium	Np	93	237	E. McMillan & P. Abelson	1940
Nickel	Ni	28	58.7	A. Cronstedt	1751
Niobium (Columbium)	Nb	41	92.9	C. Hatchett	1801
Nitrogen	N	7	14.0	D. Rutherford	1772
Nobelium	No	102	254	Fields & others	1951
Osmium	Os	76	190.2	S. Tennant	1803
Oxygen	O	8	16.0	J. Priestley	1774
Palladium	Pd	46	106.4	W. Wollasten	1803
Phosphorus	P	15	31.0	H. Brand	1669
Platinum	Pt	78	195.1	D. de Ulloa	1735
Plutonium	Pu	94	242	G. Seaborg & others	1940
Polonium	Po	84	210.0	P. & M. Curie	1898
Potassium	K	19	39.1	H. Davy	1807
Praseodymium	Pr	59*	140.9	C. von Welsbach	1885
Promethium	Pm	61	147	J. Marnsky & others	1947
Protactinium	Pa	91	231.0	F. Soddy & others	1917
Radium	Ra	88	226.1	P. & M. Curie	1898
Radon	Rn	86	222.0	Rutherford (thoron isotope)	1899
				E. Dorn (radon isotope)	1900
Rhenium	Re	75	186.2	E. Noddack & others	1925
Rhodium	Rh	45	102.9	W. Wollaston	1803
Rubidium	Rb	37	85.5	R. Bunsen & G. Kirchhoff	1861
Ruthenium	Ru	44	101.1	K. Claus (or Klaus)	1844
Samarium	Sm	62*	150.4	L de Boisbaudran	1879
Scandium	Sc	21	45.0	L. Nilson	1879
Selenium	Se	34	79.0	J. Berzelium	1817
Silicon	Si	14	28.1	J. Berzelium	1824
Silver	Ag	47	107.9	....	Prehistoric
Sodium	Na	11	23.0	H. Davy	1807
Strontium	Sr	38	87.6	H. Davy	1808
Sulphur	S	16	32.1	....	Prehistoric
Tantalum	Ta	73	181.0	A. Ekeberg	1802
Technetium	Tc	43	99	E. Segre & C. Perrier	1937
Tellurium	Te	52	127.6	M. von Reichenstein	1782
Terbium	Tb	65*	158.9	C. Mosander	1843
Thallium	Tl	81	204.4	W. Crookes	1861
Thorium	Th	90	232.0	J. Berzelium	1828
Thulium	Tm	69*	168.9	P. Cleve	1879
Tin	Sn	50	118.7	....	Prehistoric
Titanium	Ti	22	47.9	W. George	1791

Tungsten (Wolfram)	W	74	183.9	G. & F.d'Ethuyar	1783
Uranium	U	92	238.0	E. M. Peligot	1841
Vanadium	V	23	51.0	A. Delrio	1801
Xenon	Xe	54	131.3	W. Ramsay & M. Travers	1898
Ytterbium	Yb	70*	173.0	C. Marignac	1878
Yttrium	Y	39	88.9	J. Gabolin	1794
Zinc	Zn	30	65.4	....	Prehistoric
Zirconium	Zr	40	91.2	M. Klaproth	1789

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* Element 108 has not so far been discovered.

* Rare Earths: Fifteen elements from atomic number 57 to 71 are collectively known as Rare Earths because they are remarkably similar in their chemical behaviour.

SUPER CONDUCTIVITY

Conductors have eaten up roughly 50 percent of all the power produced all over the world so far. This is sheer waste. Scientists and engineers have always wondered whether carriers of electric current could not be made superconductive so that this waste is avoided. Recent discoveries indicate this is indeed possible. Frantic efforts are afoot to pull the magic wire first.

Once realised, this will mean a technological revolution with a potential impact as great as the industrial revolution or probably even greater. Besides saving phenomenal amounts of electric energy, superconductivity opens up amazing possibilities like bullet trains that move at several hundreds of kilometres per hour on cushions of magnetism, high-power small-size electric cars, computers miniaturised many times more despite being many times more powerful, nuclear reactors safer and yielding many times more energy (from nuclear fusion) and diagnostic aids of extra-dimensions though dirt-cheap.

In short, this is a whole, new world opening up. Superconductivity has therefore become a magic word overnight. The entire world has woken up to it with a jerk. Suddenly, everything is at stake. If one does not get in front, all leads in technology achieved so far are gone with the wind. So, research in the field has become a mad scramble, different from the usual pattern of an orderly race. Not without sufficient reason, however. One who gets there first will win the key to change the world and shape the future of mankind.

The crucial question is what makes the current-carriers of today resistant. Temperature has been known to be one factor contributing to carrier-resistance. The only way to make today's carriers of electricity superconductive is to lower their temperature to the rock bottom of what is known as Absolute Zero or zero degree kelvin which is minus 273°C.

Conductors cooled to this frigid limit lose all resistance to the flow of current through them. But maintaining the lowest temperature on Earth is very expensive and difficult. This was why superconductivity remained a mere curiosity in research labs though it was discovered way back, at the beginning of this century.

It was Heike Kamerlingh Onnes, a Dutch physicist, who discovered superconductivity. The year was 1911. He was studying the variation of the electrical resistance of mercury with temperature. At temperatures within a few degrees of absolute zero, the resistance dropped sharply to an unmeasurably small value. This transition to superconductivity, however, was found to involve more than simply very high or infinite electrical conductivity. In 1933, W. Meissner and R. Ochsenfeld discovered that a superconductor placed in a not-too-large magnetic field expelled the field from the interior of the conductor. Thus, further possibilities were thrown open.

But superconductivity could be established only at the low temperature of 4.2 K. This is the point at which helium gas liquefies. Superconducting devices had to be immersed in liquid helium in tightly sealed and heavily insulated containers. The cost was prohibitive. This limited the use of this technology to a few devices - a Japanese prototype of a magnetically levitated train, some particle accelerators, a few magnetic resonance imaging machines and costly magnetic 'bottles' in fusion research centres.

It was in this context that the floodgates opened during the past year. Researchers stumbled upon an unusual class of chemical compounds. These too had to be cooled to become superconductive but only to temperatures in the vicinity of 100 K. Liquid helium could now be replaced by liquid nitrogen which is cheaper. These new substances were found to be capable of generating intense magnetic fields too.

The materials originally known to be superconductive at low temperatures (lead, tin, mercury etc.) were known to lose this capability as soon as enough current was flowing through them to generate significant magnetic-fields but the ceramics, the alloys of oxides of niobium and titanium, kept their superconductivity despite strong magnetic fields.

But do want they may, till 1973, scientists could not raise the superconducting temperature beyond 23 K. It was Karl Alex Muller of IBM's Zurich laboratory who decided to try metallic oxides known as ceramics. Ceramics are very poor conductors at room temperatures, making them fit for use as electrical insulators. Muller raised the transition temperature to 35 K. But the world of physics laughed at him, though not everybody. The Japanese and the Chinese took him very seriously.

They repeated his experiments and the temperature rose to 38 K. Paul C.W. Chu of Houston University, who had been studying superconducting materials since 1955, took up the challenge. He pressurised a superconducting material and found that the transition temperature could be raised to 52 K. But he found that was the limit. At pressures greater than 10 to 12 thousand times normal atmospheric pressure, the molecular structure of the superconducting material got damaged. More pressure did no good.

Cleverly, Chu replaced the barium in the sample with strontium which is smaller in atomic structure. This was to reduce the size of the compound's molecules from within. The transition temperature could be upped by two more degrees. But when he tried calcium, an element with still smaller atoms, the transition temperature dropped. Chu then tried lanthanum. And one of Chu's graduate students, Maw-Kuen Wu, replaced lanthanum with another rare earth element, yttrium.

Rare earths are not really very rare. For example, yttrium is more abundant than lead. The word rare, in this case, is a misnomer. India and China are two countries having the world's largest rare earth deposits. Wu and Chu thus raised the temperature to 93 K. first and to 98 K a few days later.

It was at this stage that Indian scientists first reproduced the Houston results and then reported improvements. Many other variations of the compound used by Chu and Wu were tried out. And this is still going on.

Japan has quickly recognised the commercial potential of the breakthrough. Its ministry of international trade and industry plans to subsidise private sector research. Companies in Japan have already made considerable progress in superconductors.

In America too, annual government funding for superconductivity research has been doubled and a computer data bank is being created to serve as up-to-date research reference for scientists in the field. Also, a bill is on its way to form a national commission to coordinate research and development in this area.

Reliable superconductivity at room temperature is expected to be achieved any minute now. When this happens, it will be a major event of the century, like the discovery of transistors during the 1950s. And scientists at the National Physical Laboratory claim to have achieved room temperature superconductivity under laboratory conditions.

A disk of superconducting material above, bathed in liquid nitrogen to keep it cold, repels a cube of magnetic material, demonstrating the physical phenomenon behind magnetically levitated high-speed trains. Prototypes of these trains (inset) have been tested in Japan and Europe.

Fundamentalists among superconductivity researchers are studying why the ceramics lose their electrical resistance. They are frantically shooting high magnification (electron microscope) pictures of materials to find out defects, if any, in the structure of molecules. Others are using pulsed beams of neutrons, ultrasonic beams and X-rays.

The West is intrigued by the report that the temperature record set by Chu and Wu is being matched and even surpassed by researchers in India and Japan. The latest report is as high as 240 K which is warmer than the Siberian winter. This means that somebody is on the brink of ultimate success. In the past year, the transition temperature has increased by a factor of four. If it increases by the same factor in the same period again, we will have room temperature superconductivity in less than one year from now.

But there is many a hurdle yet to be cleared. One is the technology of usable shapes of the superconducting materials, worse still, if these materials are ceramic. How brittle materials of ceramic is no secret for anyone who has dropped a rice bowl.

CRYOGENICS

Cryogenics is one of the youngest sciences, having come into existence only in the 20th century. The name 'Cryogenics' is derived from a Greek word meaning, 'productive of cold'. Cryogenics deals with the production of 'very low' temperatures and the study of their physical and technological consequences.

'Very low' temperatures are generally taken to mean temperatures below –150°C and thereabouts. Absolute Zero clearly belongs to the domain of cryogenics. It is apparently unattainable on Earth.

The lowest temperature that we have reached or rather produced on Earth is only one-millionth of a degree above Absolute Zero. Scientists the world over are continuously working at reaching at least one-hundredth of the degree Absolute. This is a world far below the freezing point as we understand it. In this sub-freezing world strange things happen.

All known elements freeze solid, except helium which remains liquid. Rubber becomes so brittle that it shatters like glass. Lead rings like a bell when struck. Air freezes into a solid block. All these happen not at the point of Absolute Zero but within about 10 points above it.

Helium, the second lightest of all gases (the lightest is hydrogen), has proved to be a very slippery and recalcitrant gas. Curiously enough, this gas was first found in 1868 in the Sun's atmosphere by Sir Norman Lockyer, the British astronomer, through the spectroscope. In 1895 Sir William Ramsay found it on Earth in the uranium ore – *Clevite*. Later it was established that helium is found in all radioactive minerals and that it is released on Earth by the radioactive decay of these minerals. Ordinary air contains 1 part of the helium in 200,000 parts of air.

Helium has several usable advantages. It is inert and noninflammable. It is used for inflating airships. It resisted all attempts at liquefaction till 1908, when it succumbed to Dr. Kamerlingh-Onnes at Leyden. Thus, it is the last gas to be liquefied. Liquid helium has many remarkable properties which are not wholly understood as yet. It is indispensable in cryogenics as a medium to cool other substances to temperatures near the Absolute Zero. It is the only element that we know of which refuses to solidify even in the dangerous vicinity of Absolute Zero.

One of the surprises at low temperatures is *superfluidity*. If liquid helium is poured into a flask, separated into two chambers by a partition, it seeps through the solid partition to become level in both chambers.

Another surprising phenomenon is *super-conductivity*. Superconductivity was first discovered at the University of Leyden in 1911 by Dr. H. Kammerlingh–Onnes, who was awarded the Nobel Prize in 1913 for his earlier work of liquefying helium. However, it was only in 1957 that the theory caught up with experiment. Nobel Prize winner Dr. John Bardeen (1956) of the University of Illinois and his associates presented the first theory of superconductivity in 1957. The theory is based on quantum mechanics and is highly technical. Some 300 materials - 25 elements and the rest alloys or compounds - are, now known to be superconductors.

The application of superconductivity (that is, the total disappearance of electrical resistance) to electric power engineering promises to increase capacity, reduce cost and improve reliability of power grids. A transmission line made of superconducting niobium and roughly the diameter of the arm, can carry as much power as the peak load now being used in the whole of the United States.

Cryogenics has thousands of other applications. Rapid freezing by liquid nitrogen, for instance, confers improved taste, texture, aroma, nutritive value and appearance to food articles besides reducing degradation by bacteriological, enzymatic, oxidative and chemical reactions.

Cryogenic freezing systems, being more

economical than conventional systems, can be very handy for refrigerated transportation of marine food, fruits, vegetables and other perishable foods.

In medicine, human blood used for transfusion in hospitals cannot normally be preserved beyond three weeks. A new blood-freezing technique recently developed using liquid nitrogen can now be used for storing blood for months or even years. Cryogenics can also be used to store marrow cells in marrow banks of hospitals.

Cryosurgery has several advantages over normal surgery. It can be used to treat Parkinson's disease and other disorders of involuntary movement. Tumours can be frozen and removed with little loss of blood. Bloodless cryosurgery can also be used in tonsilectomies and in the removal of cataracts of the eyes.

Vast quantities of natural gases are burnt every year for want of economical methods for liquefying them in the country. The gases burnt at the refineries or oil fields can be liquefied by cryogenic methods and transported to the remote corners of the country for use by those who do not have the advantage of city gas lines. Liquid methane can reduce the cost of supersonic flights by about one-third.

Work on applications of cryogenics is at present going on in nearly a dozen centres in India. They include the National Physical Laboratory, New Delhi, the Tata Institute of Fundamental Research, Bombay, the Indian Institute of Science, Bangalore, the Indian Association for Cultivation of Sciences, Jadavpur, the Physics Department of Delhi University, the Solid State Physics Laboratory, Delhi, and the Indian Institute of Technology, Kanpur.

Temperature Scales

Three systems of temperature measurement are now in use - the Celsius scale, the Fahrenheit scale and the Kelvin scale. The Celsius scale was worked out by the Swedish physicist and astronomer Anders Celsius in 1742.*

It appears to have been revised by another Swedish physicist J.P. Christen. This scale was originally known as the Centigrade. It was re-named Celsius scale in honour of its inventor Celsius. The Fahrenheit scale was devised by the German-born physicist Gabriel Daniel Fahrenheit (1686–1736) around 1715. The Kelvin scale was pioneered by the Briitish physicist William Thompson Kelvin (1824–1907), later Lord Kelvin.

The International System of Units (SI) recognises the Celsius and Kelvin scales. The Kelvin scale is derived from thermodynamics and is of special importance to scientists. The scale generally used by all is the Celsius. The unit of temperature adopted by the SI is based on the Triple Point of Water, that is, the temperature at which solid, liquid, and gaseous water are all in equilibrium. The triple point has been defined as 273.16† (Kelvin) which is equivalent to 0.01°C. Zero degree Kelvin is the Absolute Zero. This corresponds to –273.16° Celsius and –459.69° Fahrenheit.

Absolute Zero is a thermodynamic concept, that is to say, it is based on heat energy. It is the point at which molecules have no heat energy. At this point all motion stops. Even atomic particles slow down.

Conversion Formula

Celsius to Kelvin: $K=C+273.16$

Fahrenheit to Celsius: $C=(F-32)\times 5/9$

Celsius to Fahrenheit: $F=C\times 9/5+32$

* In 1730 Rene Reaumur devised an alcohol thermometer with a graduated scale 0° to 80°, 0° being the freezing point of water and 80° the boiling point. It was popular for a time but gradually went out of use.

† In 1967 the notation degree Kelvin (°K) was replaced by Kelvin (K).

THE WORLD OF SOUND

Radio Telescopes have opened a new world to the astronomer _ a world of sound, not of sight. The two worlds are fantastically different. The Milky Way, for example, is a river of light to the eyes but it is a hissing mass to the ears.

Radio Telescopes, in fact, help us to listen in to stars or galaxies that lie far beyond the ken of the world's largest optical telescopes. They also enable us to study astral phenomena which are within the range of our optical telescopes but which are not visible owing to the haze of cosmic dust. Thus it is that we have managed to collect what little we know about the galactic centre of the Milky Way.

Sound is produced by the vibrations of an object or mechanism and transmitted in the form of waves – alternating increase and decrease in pressures. It radiates outward through a material medium of molecules, more or less like the ripples spreading out on water after some heavy object has been thrown into it.

Two properties of sound are important, namely the *pitch* or *frequency* and intensity or loudness. The pitch or frequency refers to the rate of vibration of the sound and is measured in Hertz (Hz) units. The frequency of sound is determined by the number of times the vibrating waves undulate per second. The slower the cycle the lower the pitch. The pitch becomes higher as the cycles increase in number or which is the same thing, as frequencies increase.

The intensity or loudness is measured in decibels. A decibel (db) (one-tenth of a *bel*) is a physical unit based on the weakest sound that can be detected by the human ear. It is named after Alexander Graham Bell, the inventor of the telephone. The decibel scale is logarithmic, that is, an increase of 10 db means 10 times as much, an increase of 20 db means 100 times and 30 db 1000 times etc. A light whisper may be about 10 db, a quiet conversation around 20 db, and normal talk 30 db. In comparison the electrically amplified beat music in a disco is a billion times louder than the sound of a whisper at 10 db. (see Box – *Noise Scale*).

The human ear cannot generally hear sounds of frequencies higher than 20,000 vibrations per second or in modern International Units 20,000 Hz. Sounds of frequencies higher than 20,000 Hz which are inaudible are called *ultra-sonic.* Bats produce very high pitch sound when they fly but they are at ultra-sonic frequencies from 20,000 to 100,000 Hz. So we cannot hear them. Ultra-sonic waves are an important tool of research in physics. There are also many applied uses for ultra-sonic waves, like sub-marine echo sounding, detection of flaws in casting, drilling glasses and ceramics, emulsification etc.

The speed of sound varies according to the nature of the carrier media. When we speak of the speed of sound, we ordinarily mean the speed at which sound travels in air at sea level. This is around 331 metres per second. In water, sound travels about 15 times faster than in air. In iron and steel it is even faster, about 3 times faster than the speed in water. Speeds of sound through some selected media are indicated below: *ice-cold water* – 1505 m per second, *brick* – 3542 m, *granite* – 395 m. *hardwood* – 3847 m and *glass* – 5000 m to 6000 m per second.

Supersonic speed is speed greater than that of sound in air at sea level, that is to say, around 1216 km per hour. Supersonic speed is measured in *Mach.* This unit was worked out by the Czech-born German physicist *Ernst Mach* and therefore named after him. Mach is the ratio of the speed of flight to the speed of sound, under the same conditions of pressure and density. When a plane moves at the speed of sound, it is Mach 1. When a plane moves at twice the speed of sound (supersonic), it is Mach 2. When it is less than the speed of sound it is *sub-sonic* and therefore less than Mach 1. At half the speed of sound it is Mach 0.5.

Sound barrier is the point at which the speed of flight equals the speed of sound. When a plane flies faster than sound, it is said to have crossed the sound barrier. When the sound barrier is passed, the speed of the aircraft produces shock waves in the atmosphere, somewhat like the bow waves produced by fast-moving ships. The shock waves in the atmosphere produce booms like thunder claps. These are called *sonic booms*. The sonic booms jar on the ears of the resident population in the areas over which the plane flies but they do not trouble the passengers or the crew because the plane goes faster than the shock waves.

The human ear can safely respond to pressures up to 120 db. Any intensity higher than this is harmful and can damage the ear. This will be clear, if we examine the functioning of the ear.

The ear consists of three parts, the *outer ear*, the *middle ear* and the *inner ear*. The outer ear *(auricle)* collects the sound stimuli. These are carried through a canal to the middle ear. The canal is not straight and is the widest where it meets the outer wall of the middle ear, the ear drum. The sweat glands of the canal are modified to secrete a kind of wax – the ear wax. The middle ear is a cavity in the temporal bone which is a part of the skull. The *tympanic membrane* or the ear drum receives the sound vibrations from the outer ear.

Three minute pieces of bone bridge the cavity, the *hammer*, the *anvil* and the *stirrup* (so called from their shapes). These transmit the vibrations received by the middle ear to the inner ear. The inner ear is a small but elaborate structure which houses two distinct organs – one for hearing and the other for balance. The organ for hearing, called the *cochlea* is a snail-shaped container which transmits sound vibrations as nerve impulses to the brain. It is the brain that intitiates the entire system of varied bodily responses to sound.

Thus, the brain activates the pituitary gland which in turn causes the thyroid and adrenal glands to excrete hormones. It stimulates the sympathetic nervous system which influences the heart, the stomach, the pupil, blood vessels and motor nerves which control muscle reactions. These and other reactions determine our bodily responses to sound.

A common misconception is that the ear gets accustomed to excessive noise if it is heard *continually*. Actually what happens is that the ear progressively loses its sensitivity and ability to transmit sound vibrations to the brain resulting in various degrees of deafness. Such disabilities become markedly noticeable in old age.

Sound is either music or noise–so goes an old saying. What is implied by this distinction is that whatever is pleasant to the ear is music while all that is unpleasant is noise. Such phrases as 'grating on the ears' or 'jarring on the nerves' express the discomfort we feel on hearing unpleasant sounds. It is such unpleasant impacts of sound that are collectively described as *noise pollution*.

All cities and towns labour under noise pollution in varying degrees. The worst offenders are the big cities, whose noisy traffic itself is a potent menace to hearing. A study recently conducted in West Germany showed that 2.5 million people (out of nearly 63 million) live in places where the noise level is high. This is a small percentage, as percentages go, but it indicates only those who are exposed to the greatest danger.

It does not mean that others are unaffected by noise pollution. Even noises at much lower levels can be harmful, especially during sleep and recuperation. Anything that disturbs repose or sleep is detrimental to health in the long run. Barking dogs and fighting cats can interfere with sleep whether in the town or in the country.

During work hours noise is definitely a deterrent to concentration. From 50 db onwards noise can interfere with normal voice communication. At 70 db even normal conversation becomes impossible. However, some people have become so accustomed to noise that they cannot concentrate on their work in the absence of familiar sounds like the radio. Maybe, these people do turn out better work in a noisy environment but they are heaping up trouble for the future.

The constant exposure to noise will steadily deteriorate the delicate parts of the middle ear, which would fail more and more in transmitting sound impulses to the inner ear, ultimately resulting in inefficient bodily responses to sound.

A study jointly conducted by the Indian Council of Medical Research and the Department of Science and Technology during the period from 1977 to 1982 showed that more than 10% of the urban population and about 7% of the rural population in India suffer from mild to severe hearing impairment. The fact that a greater percentage of the urban population – almost one and a half times its rural counterpart – suffer from defective hearing clearly shows the dangers posed by higher noise pollution levels.

Noise Scale

1. Breathing	*10 db*
2. Wind in the trees	*20 db*
3. Quiet Conversation	*20-30 db*
4. Ticking Clock	*30 db*
5. House in a quiet street	*35 db*
6. Radio Music	*50-60 db*
7. Loud conversation	*60 db*
8. Office noise	*60 db*
9. Children playing	*60-80 db*
10. Lawn mower	*60-80 db*
11. Vacuum cleaner	*80 db*
12. Traffic Noise	*60-90 db*
13. Sports car	*80-95 db*
14. Heavy truck traffic	*90-100 db*
15. Motor Cycle	*105 db*
16. Pneumatic drill	*110 db*
17. Thunder storm	*110 db*
18. Beat Music (electrically amplified)	*120 db*
19. Aircraft noise	*90-120 db*
20. Jet takeoff (at 100 m distance)	*120 db*
21. Jet engine (at 25 m distance)	*140 db*
22. Space Vehicle launch (from a short distance)	*140-170 db*

TIME SYSTEMS

The earliest instruments for measuring time included many devices like the Sun dial and the water clock which were used in Egypt. These instruments were crude. In the 2nd century B.C., Ctesibius, a Greek engineer of Alexandria, re-designed the ancient Egyptian water clock and made it popular.

The improved water clock was the best of the ancient timepieces. During the Middle Ages mechanical clocks run by falling weights came into vogue. These were more convenient than the water clocks but no more accurate. Both erred by as much as half an hour per day.

In 1884 the second — the lowest unit of time — was defined as 1/86,400 of the time that the Earth took to complete one rotation on its own axis or 1/86,400 of a day of 24 hours. This, of course, meant that the 24-hour day was made up of 86,400 seconds.

But the Earth wobbles as it rotates. This wobbling leads to fluctuations in the time of rotation. It was therefore decided in 1960 to abandon the period of rotation as the primary unit (that is, a day of 24 hours), and to adopt the period of revolution (of the Earth round the Sun) as the basis of calculations. The second was thus re-defined as 1/31,556,925.9747 of the time that the Earth took to complete one revolution round the Sun. A year of 365 days and odd, thus consisted of about 31.5 million seconds.

In 1967 the *General Conference on Weights & Measures* recognised the atomic second as determined by the *cesium* (caesium) *atom clock* as the unit of time under the International System of Units (SI). The atomic second is defined as the time taken by the cesium electron to complete 9,192,631,770 spins.

The definition is not as accurate as it looks because the cesium electron may

Greenwich Mean Time

The following zones are fast on Greenwich Time by the number of hours indicated in brackets:

Fiji, New Zealand etc. (12 hrs.). New Caledonia, New Hebrides etc. (11). Queensland, Tasmania etc. (10). Japan, Korea etc. (9). China, Hongkong, Philippines etc. (8). Singapore (7½). Java, Thailand etc. (7), Burma, Cocos Keeling Islands (6½). Bangladesh (6), India, Sri Lanka, Andaman and Nicobar Islands (5½), Pakistan (5), Mauritius, Seychelles etc. (4). Iran (3½). Iraq, Ethiopia etc. (3). Turkey, Greece, Bulgaria etc. (2). Sweden, Norway, Denmark etc, (1).

The following areas are ***slow*** *on Greenwich Time by the number of hours indicated.*

Iceland, Madeira etc. (1). Azores, Cape Verde etc. (2). Greenland (excluding Scores by Sound and Thule) and Eastern Brazil (3). Newfoundland, Labrador, Dutch Guiana and Uruguay (3½). Canada (east of 68°W), Greenland (Thule area), Puerto Rico etc. (4). Canada (from 68°W. to 85°.). Jamaica, Bahama, Bahama Is., Cuba, Haiti, Peru, Panama etc. (5). Canada (from 85°W to 102°W), Costa Rica, Salvador, Honduras, Guatemala, Nicaragua, Central parts of USA and parts of Mexico (6). Candada (from 102°W. to 120°W.), mountain States of USA and parts of Mexico (7). Canada (West of 120°W.), Alaska (south east), Western States of USA and parts of Mexico (8), Alaska (north of Cross Sound), Yukon, Christmas Is. (9). Alaska (from 141°W.), Hawaii etc. (10). Aleutian Is., Alaska (west coast), Samoa, Midway Is. (11).

sometimes take more spins and sometimes less spins than the defined norm. The deviation, however, is only a few spins either way, that is, a few spins more or less than 9192 million spins. This is insignificant.

The atomic clock has two specific advantages. It is not affected by the vagaries of the atmosphere nor by the fluctuations in the rotation of the Earth. The latter has become important in recent years. For, it has been observed from 1970 onwards that the Earth is slowing down in rotation by nearly a second every year.

Since this error has been noticed, clocks all over the world are being corrected at the beginning of every year to conform to the atomic time. The atomic clock developed by the British National Physical Laboratory has achieved a very high degree of accuracy. It is accurate to one second in 300 years.

Since January 1972, a new standard of time called the *Co-ordinated Universal Time* (UTC) has also been maintained in Paris, the headquarters of the General Conference on Weights & Measures. This is not based on any single atomic clock but on the average of atomic clock readings from 18 timing centres around the world.

The UTC does not gain or lose more than one hundred millionth of a second per day. This has whittled down the infinitesimal error of the atomic clocks to the vanishing point. It is expected that the UTC will remain absolutely correct for a quarter million years.

The system of *Standard Time* was introduced to correlate the time systems of various countries on an international basis. For this purpose the Earth was divided into 24 longitudinal zones, each zone being 15 degrees of an arc or one hour apart in time. The zero zone is centred at Greenwich (London) which gives the GMT or the Greenwich Mean Time. The 12th zone is divided by the 180th meridian, the International Date-line.

The zones to the east of this line are numbered from 1 to 12 with the prefix *minus* indicating the number of hours to be subtracted to obtain the Greenwich Time. The zones to the west are similarly numbered with the prefix *plus* which shows the number of hours that must be added to get the Greenwich Time.

The Date-line is a zigzag line that coincides more or less with the 180th meridian. When the Date-line is crossed to the west the date must be advanced by one day. When the Line is crossed to the east, the date must be set back by one day. The Line is deflected between north latitudes 48° and 75° with the result that all Asia lies to the west of the line.

The twenty-four-hour time is now being increasingly used especially by railways and other transport organizations. Its great advantage is that it dispenses with the suffixes *a.m.* and *p.m.*. In the 24-hour system, day begins at midnight, the zero hour, and the hours that follow are consecutively numbered from 0 to 23.

NUMERALS

The numerals, now in everyday use, are called Arabic numerals, because it was from the Arabs that these numerals spread to Europe. Actually, they are Indian in origin and should rightly be called Indian numerals.

The concept of zero and the digital system (including decimals) are India's contributions to the science of numerals. The Arabs adopted the Indian system. The Europeans got it from the Arabs (See Landmarks of Science).

Among the authors, who were instrumental in transmitting Indian mathematical knowledge from Arab sources to Europe, the most famous was Leonardo of Pisa (A.D. 1202). Other important authors were John Seville (1135), Adelard of Bath (1142), Robert of Chester (1142), Villedien (1240) and Sacrabosa (1242).

Roman Numerals are those used by the ancient Romans. They are letters converted into numbers I = 1, V = 5, X = 10, etc. They do not follow the digital system of Arab numerals. The general rules of Roman numerals are the following: (1) Repeating a letter repeats its value: XX = 10 + 10 = 20. (2) A letter placed after one of greater value adds thereto: VI = 5+1 = 6. (3) A letter placed before another of greater value subtracts therefrom: IV = 5-1 = 4. (4) A dash over a numeral multiplies its value by thousand: $\bar{X} = 10 \times 1000 = 10{,}000$.

Some high Arabic numerals cause a lot of confusion, when used as words. The classic instance is *billion** which in U.S. is equal to a *thousand million and* in Britain to *a million-million.*

Higher Numerals

Number	US & France	UK & Other European Countries	India
1 & 5 zeros	One Hundred Thousand	One Hundred Thousand	One Lakh
,, 6 ,,	Million	Million	Ten Lakh
,, 7 ,,	Ten Million	Ten Million	One Crore
,, 8 ,,	Hundred Million	Hundred Million	Ten Crore
,, 9 ,,	Billion	Milliard (Thousand Million)	Hundred Crore
,, 12 ,,	Trillion	Billion	....
,, 15 ,,	Quadrillion	Thousand Billion	....
,, 18 ,,	Quintillion	Trillion	....
,, 21 ,,	Sextillion	Thousand Trillion	....
,, 24 ,,	Septillion	Quadrillion	....
,, 27 ,,	Octillion	Thousand Quadrillion	....
,, 30 ,,	Nonillion	Quintillion	....
,, 33 ,,	Decillion	Thousand Quintillion	....

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* The word 'billion' wherever it is used in this book means a 'thousand million' (American sense) unless otherwise indicated.

Arabic numerals and their corresponding Roman numbers are given below:

Arabic & Roman

1	I	11	XI	30	XXX
2	II	12	XII	40	XL
3	III	13	XIII	50	L
4	IV	14	XIV	90	XC
5	V	15	XV	100	C
6	VI	16	XVI	200	CC
7	VII	17	XVII	400	CD
8	VIII	18	XVIII	500	D
9	IX	19	XIX	900	CM
10	X	20	XX	1000	M

Multiples:

$\overline{V}$ 5000; $\overline{X}$ 10,000; $\overline{L}$ 50,000; $\overline{C}$ 100,000; $\overline{D}$ 500,000; $\overline{M}$ 1,000,000.

INTERNATIONAL UNITS

During the first half of the present century, there were two widely used systems of Weights and Measures — the Imperial System and the Metric System. The Imperial System prevailed in the British Empire.

The English-speaking countries including the United States also adopted the Imperial System. The Metric System was followed in France and other European countries and their colonies and dependencies.

The *Imperial System* derived from the old Anglo-Saxon measurements. They were rough and ready units based on standards that were readily available everywhere — the human hand, for example. In their very nature, they could never be precise and, worse, they changed from person to person and from place to place.

The *inch* was the 'knuckle of the thumb.' A *yard* was the distance from the tip of *King Edgar's* nose to the tip of the middle finger of his outstretched hand. An *acre* was the amount of land that could be ploughed in a day by a yoke of oxen. The *mile* came from the Roman legionaries. Their *milli* was 1000 paces or about 1618 yards. Paces being vastly different, the mile was eventually standardised at 1760 yards.

It was from such a conglomeration of odd units that the Imperial System of weights and measures was ultimately evolved. Although these basic units are now precisely defined, their conversion into larger or smaller units is an arithmetical torment. The mile, for example, is 12×3×220×8 inches and the short ton is 16×16×14×2×4×20 drams.

The Metric System, unlike the Imperial System, was deliberately thought out. This system was adopted by France in 1790 and propagated in other European countries by Napoleon. As adopted in France, the new unit of length was the *metre* which was equal to one-ten millionth of a quadrant of the Earth's meridian. The unit of weight or mass was the *kilogram*, which was defined as the mass of a cubic decimetre (0.01 cubic metre) of water. The volume represented by a cubic decimetre of water was to be called a *litre*.

In 1870 France called together a convention to evolve a unified metric system. In 1875 the Treaty of the Metre was signed in Paris. The treaty established an *International Bureau of Weights and Measures*, and *a General Conference on Weights* and *Measures*, which would meet periodically to adopt new definitions as the need arose.

In 1889 the metre and the kilogram were re-defined in terms of a bar of platinum-iridium alloy which was stored in a vault in Paris.

Today the metric system has been adopted by almost all nations.†

In 1954 the General Conference on Weights & Measures adopted one form of the Metric system as an internationally suitable system. In 1960 the system was named *System International de Unites* or the International System of Units, shortened to SI.

The system rests on 4 independent base units for *length, mass, time* and *temperature*.

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† In 1971 the US decided to change over to the Metric System in ten years at the end of which the US will be predominantly but not exclusively on the Metric System. The Metric Conversion Act of 1975 legalised the change-over and set up the US Metric Board to supervise it.

The units for length and mass are the *metre* and the *kilogram* respectively. The unit of time is the *second*, which has been defined in terms of the atomic clock. The unit of temperature is the degree Celsius (centigrade) or *Kelvin* as opposed to Fahrenheit. The conference has also accepted certain well-established units like the *minute* and the *hour* (units of time), the *degree*, the *minute* and the *second* as units of angular measurement and the *nautical mile* and *knot*.

The spectacular development of science and technology compelled the conference to define precisely, generally known units of measurement like length, mass or time. In addition, the conference had to adopt and define new units of measurement. The labours of the Conference in this regard led to the evolution of a complicated and highly technical international system. The definitions are stated in strict scientific jargon which the layman can hardly follow. A brief outline of the system is given below.

The S.I. Units are broadly divisible into three classes.

1. Base units which form the foundations of the system.
2. Derived units which are generally formed by a combination of Base units.
3. Supplementary units which are used in angular measurement.

The special feature of the system is its coherence. A coherent set of units can be defined as one that arises, when a quotient or product of any two quantities leads to the unit of the resultant quantity. In other words, all units of the system hold together and are explicable in terms of other units.

International Units

Base unit	*Symbol*	*Year of Adoption*
METRE-Unit of length	m	1960
KILOGRAM-unit of mass	kg	,,
SECOND-unit of time	s	1967
AMPERE-Unit of electric current	A	1948
KELVIN-Unit of thermodynamic temperature	K	1967
CANDELA-Unit of luminous intensity	cd	,,
MOLE-Amount of substance*	mol	1971

*One mole (mol) is an amount of substance in grams equal to its molecular weight.

Supplementary Units

RADIAN-plane angle	rad	1960
STERADIAN-Solid angle	sr	1960

Simple Expression in Terms of Base Units

Quantity	*Name*	*Symbol*
'Area	square metre	m^2
Volume	cubic metre	m^3
Speed	metre per second	m/s
Density	Kilogram per cubic metre	kg/m^3
Specific Volume	cubic metre per kilogram	m^3/kg
Luminance	candela per square metre	cd/m^2

The base units are defined as under:

Metre. The General Conference on Weights and Measures, an international organization based in France, decided to give a new definition to the metre. Now "the metre is the length of the path travelled by light in vacuum during a time interval of 1/299,792,458 of a second'.

Kilogram. It is the mass of the international prototype of the kilogram, which is in the custody of the "Bureau International des Poids et Measures (BIPM) Sevres", near PARIS. Among the base units, the unit of mass is the only one whose name, for historical reasons, contains a prefix (Kilo).

Second. It is the duration of 9,129,631,770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the Caesium-133 atom.

Ampere. It is that constant current which, if maintained in two straight parallel conductors of infinite length, of negligible cross section, and placed at a distance of 1 metre apart in vacuum, would produce between these conductors a force equal to 2×10^{-7} newton per metre of length.

Kelvin. It is the fraction 1/273.16 of the thermodynamic temperature of the triple point of water.

Candela. It is the luminous intensity, in the perpendicular direction, of a surface of 1/600,000 square metre of a black body at the temperature of freezing platinum under a pressure of 101,325 newtons per square metre.

Mole. It is the amount of substance of a system which contains as many elementary entities as there are atoms in 0.021 kilogram of carbon 12.

Derived Units with Special Names

Quantity	*Name*	*Symbol*
Frequency	hertz	Hz
Force	newton	N
Pressure	pascal	Pa
Quantity of electricity	coulomb	C
Electric tension	volt	V
Electric resistance	ohm	Ω
Luminous flux	lumen	lm
Illuminance	lux	lx

The supplementary units are 1. Radian (rad) Plane angle and 2. Steradian (sr) Solid Angle.

Radian. It is the plane angle which, having its vertex at the centre of a circle, cuts off a length on the circumference of the circle equal to the radius of the circle.

Steradian. It is the solid angle which, having its vertex at the centre of a sphere, cuts off an area of the surface of the sphere equal to that of a square with sides of length equal to the radius of the sphere.

Multiples and Subdivisions. Multiples and subdivisions (fractions) are indicated by appropriate prefixes. Multiples upto 1000 are indicated by the following prefixes — deca (10), hecto (100), and kilo (1000). Fractions upto 1000 are expressed as follows — deci (1/10), centi (1/100), and milli (1/1000).

For multiples and fractions above 1000 the following prefixes have been adopted.

Multiples

Tera(T)	=	10^{12}(1	followed	by 12	zeros)
Giga(G)	=	10^{9}	,,	9	,,
Mega(M)	=	10^{6}	,,	6	,,
Kilo(k)	=	10^{3}	,,	3	,,
Hecto(h)	=	10^{2}	,,	2	,,
Deca(da)	=	10^{1}	,,	1	,,

Fractions

Deci(d) = 10^{-1}	(0.1)
Centi(c) = 10^{-2}	(0.01)
Milli(m) = 10^{-3}	(0.001)
Micro(μ) = 10^{-6}	(Decimal point, followed by 5 zeros and 1)
Nano(n) = 10^{-9}	(Decimal point, followed by 8 zeros and 1)
Pico(p) = 10^{-12}	(Decimal point, followed by 11 zeros and 1)
Femto(f) = 10^{-15}	(Decimal point, followed by 14 zeros and 1)
Atto(a) = 10^{-18}	(Decimal point, followed by 17 zeros and 1)

Thus a kilometre is 1000 metres and a megametre is 1,000,000 metres while a millimetre is 0.001 metre and a micrometre is 0.000,001 metre.

Very elaborate rules have been formulated with regard to notation, type to be used, prefix symbols and the exponent to be prefixed to a symbol. Symbols are not to be followed by full stop and do not change in the plural.

In 1969 the International Committee on Weights and Measures (CIPM), an auxiliary of the General Conference, recognised the use of some units which were strictly not part of the SI but which were in widespread use. Some of the commoner units and their SI equivalents are given below:

SI Equivalent

Length			
1	angstrom	0.1	nanometre (nm)
1	chain	20.12	metre (m)
1	engineer's chain	30.48	do
1	fathom	1.829	do
1	foot	0.304 8†	do
1	furiong	0.201 2†	kilometre (km)
1	*inch*	25.4	millimetre (mm)
1	link	0.201 2†	*metre (m)*
1	mile	1.609	kilometre (km)
1	nautical mile international	1.852	do
1	nautical mile telegraph	1.855	do
1	nautical mile U.K.	1.853	do
Area			
1	acre	4047	sq metre
1	sq foot	929.0	sq centimetre
1	sq mile	2.599	sq kilometre
1	sq yard	0.836 1†	sq metre
Volume			
1	cubic foot	28.32	cubic decimetre
1	cubic inch	16.39	do centimetre
1	fluid ounce	28.41	do do
1	gallon, imperial	4.546	cubic decimetre
1	gallon US	3.785	do do
1	pint, imperial	0.586 3†	do do
Mass			
1	grain	64.80	milligram
1	hundred weight	50.80	kilogram
1	maund	37.32	do
1	ounce	28.35	gram
1	pound	0.453 6†	kilogram
1	quintal	100	do
1	seer	0.933 1†	do
1	tola	11.66	gram
1	ton	1.016	tonne
1	ton US	0.907 2†	do

Velocity

1	foot per minute	0.005 08†	metre per second
1	foot per second	0.304 8†	metre per second
1	inch per second	25.4	millimetre per second
1	knot	0.514 4†	metre per second
		1.852	km per hour
1	knot UK	0.514 7†	metre per second
		1.853	km per hour
1	mile per hour	0.447 0†	metre per second
		1.609	km per hour

Fuel Consumption

1	gallon per mile	2.825	litre per km
1	US gallon per mile	2.352	do
1	mile per gallon	0.354 0†	km per litre
1	mile per US gallon	0.425 1†	km per litre

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† Among the rules of notation for S. I. one rule says that where a numerical value contains more than three digits, it is advisable to separate the digits into groups of three moving to the left or right of the decimal point. The separation is to be indicated by omitting a space and not by a comma as is usually done. The omission of space in item number 5 in the above table (0.304 8 instead of 0.304, 8) and other similar omissions are to be treated as commas and read accordingly.

Table of Metric Weights and Measures

Linear Measure

10	Millimetres (mm)	=	1	centimetre	(cm)
10	centimetres	=	1	decimetre	(dm)
10	decimetres	=	1	metre	(m)
10	metres	=	1	decametre	(da m)
10	decametres	=	1	hectometre	(hm)
10	hectometres	=	1	kilometre	(km)

Area Measure

100	square millmetres (mm²)	=	1	square centimetre	(cm²)
10,000	square centimetres	=	1	square metre	(m²)
100	square metres (m²)	=	1	are	(a)
100	ares	=	1	hectare	(ha)
100	hectares	=	1	square kilometre	(sq km)

Volume Measure

	one litre (l)	=		0.001 cubic metre	
10	millilitres (ml)	=	1	centilitre	(cl)
10	centilitres	=	1	decilitre	(dl)
10	decilitres	=	1	litre	(l)
10	litres	=	1	decalitre	(da l)
10	decalitres	=	1	hectolitre	(hl)
10	hectolitres	=	1	kilolitre	(kl)

Weight

10	milligrams (mg)	=	1	centigram	(cg)
10	centigrams	=	1	decigram	(dg)
10	decigrams	=	1	gram	(g)
10	grams	=	1	decagram	(da g)
10	decagrams	=	1	hectogram	(hg)
10	hectograms	=	1	kilogram	(kg)
1000	kilograms	=	1	metric tonne	(t)

Cubic Measure

1000	cubic millimetres (mm³)	=	1	cubic centimetre	(cm³)
1000	cubic centimetres	=	1	cubic decimetre	(dm³)
1000	cubic decimetres	=	1	cubic metre	(m³)

Double Conversion Tables for Weights and Measures

Note: The central figures (1 to 100) represent either of the two columns beside them, as the case may be.

Example: 1 centimetre=0.394 inches and 1 inch=2.540 centimetres. 1 metre=1.094 yards and 1 yard=0.914 metres. 1 kilometre=0.621 miles and 1 mile=1.609 kilometres.

Centimetres		*Inches*	*Metres*		*Yards*	*Kilometres*		*Miles*
2.540	1	0.394	0.914	1	1.094	1.609	1	0.621
5.000	2	0.787	1.829	2	2.187	3.219	2	1.243
7.620	3	1.181	2.743	3	3.281	4.828	3	1.864
10.160	4	1.575	3.658	4	4.374	6.437	4	2.485
12.700	5	1.969	4.572	5	5.468	8.047	5	3.107
15.240	6	2.362	5.486	6	6.562	9.656	6	3.728
17.780	7	2.756	6.401	7	7.655	11.266	7	4.350
20.320	8	3.150	7.315	8	8.749	12.875	8	4.971
22.860	9	3.543	8.230	9	9.843	14.484	9	5.592
25.400	10	3.937	9.144	10	10.936	16.094	10	6.214
127.000	50	19.685	45.720	50	54.681	80.468	50	31.068
254.000	100	39.370	91.439	100	109.361	160.936	100	62.136

Hectares		*Acres*	*Square Kilometres*		*Square Miles*	*Kilograms*		*Av. Pound*
0.404	1	2.471	2.590	1	0.386	0.454	1	2.205
0.809	2	4.942	5.180	2	0.772	0.907	2	4.409
1.214	3	7.413	7.770	3	1.158	1.361	3	6.614
1.619	4	9.884	10.360	4	1.544	1.814	4	8.818
2.023	5	12.355	12.950	5	1.931	2.268	5	11.023
2.428	6	14.826	15.540	6	2.317	2.722	6	13.228
2.833	7	17.298	18.130	7	2.703	3.175	7	15.432
3.237	8	19.769	20.720	8	3.089	3.629	8	17.637
3.642	9	22.240	23.310	9	3.475	4.082	9	19.842
4.047	10	24.711	25.900	10	3.861	4.536	10	22.046
20.234	50	123.554	129.498	50	19.306	22.680	50	110.231
40.468	100	247.108	258.995	100	38.611	45.359	100	220.462

Metric Tonnes		*Long Tons*	*Metric Tonnes*		*Short Tons*	*Litres*		*Pints*
1.016	1	0.984	0.907	1	1.102	0.568	1	1.760
2.032	2	1.968	1.814	2	2.205	1.136	2	3.520
3.048	3	2.953	2.722	3	3.307	1.705	3	5.279
4.064	4	3.937	3.629	4	4.409	2.273	4	7.039
5.080	5	4.921	4.536	5	5.512	2.841	5	8.799
6.096	6	5.905	5.443	6	6.614	3.409	6	10.559
7.112	7	6.889	6.350	7	7.716	3.978	7	12.319

8.128	8	7.874	7.257	8	8.818	4.546	8	14.078
9.144	9	8.858	8.165	9	9.921	5.114	9	15.838
10.161	10	9.842	9.072	10	11.023	5.682	10	17.598
50.803	50	49.211	45.359	50	55.116	28.412	50	87.990
110.605	100	98.421	90.718	100	110.231	56.824	100	175.980

Long Ton (Br.) = 2240 lb
Short Ton (US) = 2000 lb
Tonne (metric ton) = 1000 kg
Quintal = 100 kg

Litres		*Gallons*	*Litres*		*Gallons*
4.546	1	0.220	31.822	7	1.540
9.092	2	0.440	36.368	8	1.760
13.638	3	0.660	40.914	9	1.980
18.184	4	0.880	45.460	10	2.200
22.730	5	1.100	227.298	50	10.999
27.276	6	1.320	454.596	100	21.997

Simple Conversion Table
Indian Units

Tolas to grams										
Totals	1	2	3	4	5	6	7	8	9	10
Grams	11.66	23.33	34.99	46.66	58.32	69.98	81.65	93.31	104.97	116.64
Seers to kilograms										
Seers	1	2	3	4	5	6	7	8	9	10
Kilograms	0.93	1.87	2.80	3.73	4.67	5.60	6.53	7.46	8.40	9.33
Maunds to Quintals										
Maunds	1	2	3	4	5	6	7	8	9	10
Quintals	0.37	0.75	1.12	1.49	1.87	2.24	2.61	2.99	3.36	3.73

THE WORLD OF MEDICINE

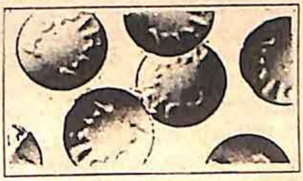
The world is endowed with many systems of Medicine: Allopathy, Homeopathy, Ayurveda, the Arabic, the Egyptian, the Graeco-Roman,.... etc. While the Western system has entrenched itself with multifarious growth, there is a growing awareness of the distinctive efficacy of Eastern systems like the Ayurveda.

All ancient civilizations—Egyptian, Babylonian, Indian and Chinese—developed their own systems of medicine. Egyptian seems to have been the first and the best in the field. It had a fully developed medical system by the third millennium B.C.

We know very little of the Babylonian system and much less, almost nothing, of the Indus Valley system. The Indian system, as we know it, starts with the Rigveda (2000 B.C.). The earliest known medical treatise in China appeared around 450 B.C,.

The Egyptian system, like all other ancient systems, laboured under a heavy load of superstition and magic. Yet it developed many cures that have stood the test of time. Pain-killing drugs and sedatives were well-known to the Egyptians. Queen Nefretiti is portrayed in a bas-relief as administering a pain-killing drug to her ailing husband, the Pharaoh. *Henbane,* a herb, which is known to us as a sedative source was first used by the Egyptians. *Onion* as a cure for scurvy and also as a cure for intestinal disorders is an old

Aspirin The New Wonder Drug



Imagine a single drug that could lower the risk of heart attack, speed the recovery of stroke victims, prevent miscarriages, cut the incidence of cataracts, curb high blood pressure, reduce fever and inflammation, relieve aches and pains, and perhaps even bolster the body's defenses against cancer and the common cold. A miracle drug indeed! It is not new, expensive, or a triumph of medical technology. It is plain, old aspirin , a drug probably first discovered in its natural form by the ancient Greeks.

Today, aspirin is perhaps the most common drug in the world. Since the late 1800s, when it was first synthesized by German chemists, millions of people have taken billions of the ubiquitous, white, 325-milligram tablets to reduce pain and fever.

The discovery that aspirin inhibits the production of certain hormone-like substances in the body was the key piece to the puzzle. The landmark finding earned British scientist John Vane a share of the 1982 Nobel prize for medicine and sparked widespread interest.

Subsequent research proved that aspirin was an effective treatment for certain types of strokes and heart ailments. In studies of childbirth, aspirin has proven effective against a dangerous condition known as pre-eclampsia - high blood pressure in pregnant women near the time of delivery. The drug has also increased the weight of babies delivered by women who had previously given birth to unusually small infants. It has been discovered that aspirin stimulates the body's production of interleuken-2 and interferon - two important proteins in the immune system.

(Excerpts from Bob Blanchy's article in 'Voice.')

Egyptian prescription.

The Chinese system must have been many centuries old when the first great medical treatise appeared in China around 450 B.C. This treatise, unlike the Indian *Rigveda* and the later *Atharvaveda,* is an elaborate treatise on medicine, comparable to the *Susruta Samhita* or the *Charaka Samhita* of India. It included, among others, detailed descriptions of *acupuncture* which has received international publicity during recent times. Between 600 and 900 A.D., the Chinese system of medicine, known as Han-Yi, had spread to Korea and Japan and much of South East Asia.

Ancient China has developed many cures, some of which have come down to modern times. *Ephedra*, a herb which soothes coughs, was known to the Chinese 4000 years ago. *Rhubarb* as a laxative was first used in China. *Pumpkin* seeds, another Chinese contribution, is a well-known wormridder. It is now found to be effective against snail fever also.

The Graeco-Roman system was almost entirely derived from the Egyptian system. Most of its cures are of Egyptian origin. To the Greeks, we owe the first revolutionary change in medical practice—the liberation of medicine from superstition and magic. *Hippocrates*, a Greek physician known as the Father of Medicine in the West, condemned the use of charms and chants in medicine. He laid down a code of conduct for medical practitioners. Scientific therapy started with Hippocrates.

The Arabs rev onised the science of
medicine by effect a synthesis of Indian
medical system the Graeco-Roman
system. They pas on this knowledge to
Europe. The influe f Arabic medicine on
Europe was wide d and longstanding.
Qunun (Canon) v by the Arab scholar
Avicenna (11th c .D.) became the pri-
mary text of med udies in Europe and
continued to be s ate as the 17th cen-
tury.

Under the Mu mperors, Arab medi-
cine came to India ok root in India, under
the name of *Una* ainly because there
was so much in on between the old
Indian system a new Unani system.
The term *Unani* i ed from the Sanskrit
Yavana meanin . The Unani system
continues to this India.

The Indian System known as *Ayurveda* originated as far back as 2000 B.C. *Ayurveda* is a compound word in Sanskrit, meaning, literally, *the Science of Life*. Actually, it implies two connected ideas—the science of life and the art of living.

Ayurveda, unlike allopathy or homeopathy, does not swear by any particular principle of cure. Ayurvedic treatment covers all the principles of allopathy, homeopathy and naturopathy. "Thus," says Pandit Shiv Sharma, President of the Central Council of Indian Medicine, "the homeopathic opium which cures constipation and the allopathic opium which causes it, both fall within the Ayurvedic therapeutic measures."

According to Ayurveda, "there are three basic constituent complexes in the physiological system called *doshas*. They are *Vayu* or *Vata, Pitta* and *Kapha* or *Sleshma*. These terms, though literally they mean *wind, bile* and *phlegm* respectively, embrace much more. Between them, they sustain the whole body metabolism.

Good health implies an ideal balance between the three doshic factors. No true *mono-doshic* individual exists. It is the predominance of any particular *dosha* which marks the constitutional types of men. On this basis, humans are divided into three psychosomatic types, namely the *vataprakriti*, the *pitta-prakriti* and the *kaphaprakriti*.

The Ayurvedic physician has to evaluate the *doshic* picture of the patient and find out what type of *tridosha* predominates and set right the imbalance by prescribing drugs, diets and practices.

The western system of medicine was later named *Allopathy* by *Hahnemann* to distinguish it from his own system Homeopathy. Allo, from the Greek word *Alos*, means other or another, and implies the treatment of diseases by other drugs, that is, drugs having effects opposed to the symptoms. Homeo, from Greek word *Homos*, means treatment by drugs having the same effects as the symptoms of disease. In other words, homeopathy (literally, similar suffering) is based on the principle 'like cures like' while allopathy is based on the principle 'opposites cure opposites.'

AIDS on the Rise

AIDS - Acquired Immune Deficiency Syndrome - is spreading far beyond the borders of the U.S. where it was discovered eleven years ago. It claimed its first victim in India on June 9, 1986.

The number of AIDS cases reported to the World Health Organization exceeded 500,000 by the middle of 1989 and may reach one million by 1993.

The number of people carrying the HIV (Human Immuno deficiency Virus) which causes AIDS, now put between five and ten million, is likely to touch 20 million by 2000, according to WHO. About 155 countries report to WHO on AIDS.

The United States remains by far the worst-affected by the disease with 100,000 cases. According to the projection by the Centre for Disease Control in Atlanta there would be 270,000 cases and 179,000 deaths due to AIDS in 1991.

An AIDS virus magnified 35,000 times

AIDS is a specific clinical entity associated with infection by a virus, a retrovirus called HTLV-III (Human T-Lymphotrophic Virus Type-III) or LAV (Lymphadenopathy - Associated Virus) or ARV (AIDS- Related Virus) depending upon the manner in which the virus was isolated by various research groups. The international Committee on Taxonomy of Viruses has collectively named it Human Immuno deficiency Virus (HIV).

Milestones in Medicine

System/Invention/ Discovery	Date	Inventor/Discoverer/ Pioneer/Author	Country
Ayurveda	2000-1000 BC	Atreya	India
Western Scientific Therapy	460-370 BC	Hippocrates	Greece
Yoga	200-100 BC	Patanjali	India
Ashtanga Hridaya	c.550 AD	Vagbhata	India
Sidhayoga	c.750	Vrdukunta	India
Anatomia*	1316	Mondino	Italy
Chemotherapy	1493-1541	Paracelsus	Switzerland

* First book on Anatomy

Modern Medicine

Circulation of blood	1628	William Harvey	Britain
Biochemistry	c.1648	Jan Baptista Van Helmont	Belgium
Bacteria	1683	Leeuwenhock	Holland
Neurology	1758-1828	Franz Joseph Gall	Germany
Physiology	1757-66	Albrecht Von Haller	Switzerland
Vaccination	1796	Edward Jenner	Britian
Histology	1771-1802	Marie Bichat	France
Stethoscope	1819	Rene Laennec	France
Embryology	1792-1896	Kari Ernest-Van Baer	Estonia (USSR)
Morphine	1805	Friderich Sertumer	Germany
Chloroform as anaesthetic	1847	James Simpson	Britain
Rabies Vaccine	1860	Louis Pasteur	France
Bacteriology	1872	Ferdinand Cohn	Germany
Leprosy Bacillus	1873	Hansen	Norway
Cholera. T.B. germs	1877	Robert Koch	Germany
Malaria germs	1880	Laveran	France
Diphtheria germs	1883-84	Klebs & Loffler	Germany
Aspirin	1889	Dreser	Germany
Virology	1892	Ivanovski & Bajernick	USSR, Holland
Psycho-analysis	1895	Sigmund Freud	Austria
Serology	1884-1915	Paul Ehrlich	Germany
Anti-toxins (science of immunity)	1890	Behring & Kitasato	Germany, Japan
Adrenaline	1894	Schafer and Oliver	Britain
Endocrinology	1902	Bayliss & Starling	Britain
Electro-Cardiograph	1906	Einthoven	Holland
Typhus Vaccine	1909	J. Nicolle	France
Sex hormones	1910	Eugen Steinach	Austria
Vitamins	1912	Sir F. G. Hopkins	Britain
Vitamin C	1912	Froelich Holst	Norway
Vitamin A	1913	McCollum and M. Davis	USA

Vitamin B	1916	McCollum	USA
Synthetic Antigens	1917	Landsteiner	USA
Thyroxin	1919	Edward Calvin-Kendall	USA
Insulin for Diabetes	1921	Banting & Best	Canada
Vitamin D	1922	McCollum	USA
Vitamin B1	1926	Minot & Murphy	USA
Penicillin	1928	Alexander Fleming	Britain
Cortisone	1936	Edward Calvin-Kendall	USA
D.D.T. (Dichloro-Diphenyl-Trichloroethane)	1939	Paul Muller	Germany
Rh-factor	1940	Karl Landsteiner	USA
Streptomycin	1944	Selman Waksmann	USA
LSD (Lysergic acid diethylamide)	1943	Hoffman	Switzerland
Kidney Machine	1944	Kolf	Holland
Chloromycetin	1947	Burkholder	USA
Aureomycin	1948	Duggar	USA
Reserpine	1949	Jal Vakil	India
Terramycin	1950	Finlay & Others	USA
Cryo-surgery	1953	Henry Swan	USA
Open Heart Surgery	1953	Walton Lillehel	USA
Poliomyelitis vaccine	1954	Jonas Salk	USA
Poliomyelitis vaccine (oral)	1954	Albert Sabin	USA
Contraceptive pills	1955	Pincus	USA
Use of artificial heart for surgery	1963	Michael de Bakey	USA
Heart Transplant Surgery	1967	Christian Barnard	S.Africa
First Test Tube Baby	1978	Steptoe & Edwards	Britain
Gene Therapy on humans	1980	Martin Clive	USA
Small Pox eradicated	1980	W.H.O. Declaration	
Genes associated with Cancer	1982	Robert Weinberg & others	USA

TEST TUBE BABIES

World's first Test Tube Baby, Louise Joy Brown, is twelve years old now. Born to Lesley and Gilbert Brown of the U.K. on July 25, 1978, the baby girl soon became the darling of millions, opening new hope for couples suffering from infertility around the world.

Birth of Louise was the successful culmination of the bold and painstaking experiments of Robert Edwards and Patrick Steptoe - a scientist and doctor team in close collaboration. Soon after, India announced the birth of another baby girl Durga, as a result of the world's first frozen embryo transfer under the supervision of Dr. Subhas Mukerjee of Calcutta. China reported the success of developing its first test-tube human embryo at the genetic engineering research department of Beijing Medical University on September 21, 1985.

World-wide. While the ethical debate continues, medical world has been reporting test tube births world-wide, almost routinely and Treatment Clinics have sprung up in many countries in the East and the West.

There have been many pairs of test tube twins and also test tube triplets. Louise Brown herself got a test tube baby sister, Natalie

Jane, born in 1982.

The first test tube quadruplets were born in Australia in January 1984 and Belgium reported another one in July 1985.

Brussels St. Peter Hospital said that three embryos had been implanted into the mother's womb in the hope that at least one would develop. But all the three succeeded and one even separated into twins.

In Melbourne Hospital, quadruplets, all boys, were born to a woman who had been trying for ten years to have a child. The boys were named Sam, Christopher, Ben and Brett.

No New Idea. Test tube babies or the production of babies in the laboratory is not a new idea. What is involved here is an artificial method of fertilisation. The ovum of a woman is taken out and is fertilised by the sperm of a male in a test tube. The fertilised ovum is then implanted into the womb of the woman, who supplied the ovum. The fertilised egg attaches itself to the womb and completes its period of gestation within the womb in the normal manner and is delivered in the normal course.

Here, there is very little interference with the natural process–the only difference being that the ovum is fertilised outside the womb (in a test tube) instead of in the fallopian tube of the woman concerned. Socially also, there is nothing reprehensible in this sort of reproduction, so long as the ovum is fertilised by the sperm of the husband.

Complications. Social, ethical or legal complications set in when the woman involved is unmarried or when the ovum is fertilised by the sperm of any male other than the husband of the woman. If the woman is unmarried there is the question of paternity or who the father is, and consequential problems.

Similar difficulties arise if the ovum of a woman is fertilised by the sperm of any man other than her husband. It may also happen that the ovum of one woman, fertilised by the sperm of an unknown male, is implanted in the womb of another woman who brings forth the child. This is an extreme case where there will be two mothers for the same child and may be two fathers.

In the case of an unmarried woman or a married woman whose ovum is fertilised by the sperm of any person other than her husband, the name of the donor of the sperm will not be revealed either to the woman or to any others. Similarly, the donor of the sperm will never know whose ovum he has fertilised. At least, this is one of the conditions the doctors insist upon, for obvious reasons. Legal complications apart, such revelations will be highly embarrassing to all concerned.

First Success. However, it was none of these difficulties which obstructed the production of test tube babies till 1978. The difficulty was that the fertilised ovum, even if planted in the womb of the same woman, will not stay there till the end of the gestation period. It will be thrown out, that is, miscarried.

The Scientist-Doctor team at Oldham, U.K., succeeded against these odds in 1978 and since then hundreds of babies have born of the 'in vitro fertilisation'–the scientific name for the technique. The term 'in vitro' means "in glass", but in America's Norfold Clinic, fertilisation actually takes place in plastic.

The husband's semen is dropped into the plastic culture dishes - not test tubes as in some countries–where the individual eggs have been incubating. Thus the process of intercourse between the woman's egg and male semen takes place in plastic dishes. Some couples later claim to possess these plastic dishes for sentimental reasons. Thereafter the process is very simple.

The Conception. Within 12 hours, the fertilised egg begins to rearrange itself. Though hundreds of sperm wriggle about an egg in a laboratory dish, only one sperm penetrates to fertilise the egg. The roundish bodies in the centre of the cell, called pronuclei, merge the chromosomes from the mother and father thus completing the process of conception. The patients have a 20 percent chance of getting pregnant during the four-week treatment-about the same chance other women have during a month of male-female intercourse.

The growth. Two days later the single cell divides into two and then four and is ready to be transferred into the mother. Though all of them cannot penetrate, scores of sperm still cling stubbornly to the outer membrane. The expectant mothers are then advised to lie down undisturbed.

The test tube or plastic dish children, therefore, extract far more effort and expense from the parents and it is wrong to minimise affection or sentimental attachment with them. The whole gambit is to provide the remedy for damaged fallopian tube (arteries) in a woman's body and/or invigorate the eggs with powerful male semen in case of husband's inherent weakness.

Surrogate Mother. There have been instances of parents hiring the services of other women to receive the embryos, bear them, grow them in their womb and deliver the baby. These mothers are called Surrogate Mothers. Commercial agencies are organising such mothers on fabulous fees.

These are inviting legal and ethical complications as well. Two wealthy parents died in an air-crash in Australia leaving test-tube embryos frozen in liquid nitrogen. Doctors faced the dilemma whether to throw the embryos out or implant them in a surrogate mother so that they can inherit their parents' fortune.

In France, a young widow went to court to establish her right to be impregnated with the sperm deep frozen by her husband shortly before his death.

Dilemma. A great dilemma facing the medical world is whether to permit destruction of excess embryos after impregnating a receiver or allow experimentation with them. One argument is that this is tantamount to destruction of human life. Groups like LIFE, the anti-abortion organisation, argue that embryos are entitled to the protection due to any human being.

The legal question is whose child it would be if a surrogate mother leases her womb for nine months for another person. The resulting baby would have no genetic connection with the one who gave birth to the child, but as the law stands, the baby would be hers–illegitimately–and the real parents would have to adopt it.

COMPUTER REVOLUTION

The 20th century is witnessing a computer revolution in which information processing and retrieval are being done reliably at incredible speeds. Microprocessors which made their impact felt about fifteen years ago are the basis for a new breed of computers whose ultimate goal is to simulate the intelligence of Man. Microcomputers are becoming faster and cheaper and very soon they are expected to be as powerful as the mainframe computers.

Today microprocessors can be found in children's toys, word processors, pocket calculators, industrial robots, home appliances, etc. - to mention a few of their innumerable uses - and there is practically no new machine, instrument, control equipment or information system that does not have a microprocessor in it.

First Generations. The first four generations of computers were based on the technology of the age to which they belonged. They were thus based on the vacuum tube technology; the transistor and printed circuit technology; the integrated circuit technology and the Very Large Scale Integrated (VLSI) technology, respectively, during the last four decades. The marvel of the fourth generation VLSI technology is that a microprocessor weighing a few grams - a thin 2" x 1" silicon chip - can store 512 K or 512 x 1024 bits of Os and Is. (Note: bit is an abbreviation for the binary digit).

Computers are analog or digital machines. Those converting numbers into physical quantities, which can vary continuously within a range are called analog computers, while those using numbers, (which are discrete values) are called digital computers. There is a third class of computers called hybrid computers which have digital storage and switching but in them calculations are done in an analog fashion.

While analog computers are for specific scientific/technological operations-such as harmonic analysis, solution of simultaneous algebraic and polynominal equations, solutions of differential equations, etc. in fields such as hydrodynamics, aerodynamics, serodynamics, industrial control, etc., the digital computers are universal in that they have applications not only in the scientific field but also in the fields of business and administration. Further, due to their superior flexibility and accuracy, the digital computers dominate the contemporary computer scene, the latest of which are called microcomputers.

History. Though the origins of the mechanical digital calculators can be traced to the mathematicians Blaise Pascall (1623-62) and Goffried Wilhelm Liebnitz (1646-1716), Charles Babbage (1792-1871) was the first to think of a machine to produce and store the tables of logarithms invented by John Napier (1550-1617). He designed first a difference engine and later an analytical engine, an all-purpose calculating machine. But, despite his best efforts, the use of all his resources and a substantial British Government subsidy, success eluded him.

The origins of the present technological revolution can be traced to the '30s. The thermionic valve discovered in 1904, was found to be useful as a counting device by Wynn Williams in 1931. The Harvard Mark 1 Computer designed by Howard Aiken is the world's first digital computer which made use of electro-mechanical devices. It was developed jointly by the International Business Machines (IBM) and the Harvard University in 1944.

In February 1946, the world's first all-electronic digital computer called ENIAC, the Electronic Numerical Integrator And Calculator, was formally dedicated. It was manufactured for the Ballistic Research Laboratories (Aberdeen) of U.S.A. at the Moore School of Engineering of the University of Pennsylvania. This first generation computer based on vacuum tube technology could store twenty 10-digit numbers. It has a multiplication time of 3 milliseconds for two 10-digit numbers and it could perform about 5000 additionss per second. The ENIAC contained 18,000 vacuum tubes, about 70,000 resistors, 10,000 capacitors and 6000 switches. It was 100 ft. long, 10 ft. high and 3 ft. deep and weighed about 30 tons. It was a decimal machine unlike the later computers (starting with the EDVAC in 1950) which are based on the binary (0, 1) system of numeration.

In June 1945, John von Neumann, an outstanding mathematician and logician, prepared the "First draft of a Report on the EDVAC" (Electronic Discrete Variable Automatic Computer), which in the words of Hermann H. Goldstein, a collaborator of von Neumann, is "the most important document ever written on computing and computers". The standard von Neumann architecture for the digital computers, built into the first four generations of computers, incorporated in their structural design the Input, Output, Memory, Arithmetic Logical Unit (ALU) and control units. This traditional von Neumann design is based on a single central processor unit (CPU) performing operations sequentiallly on an ordered sequence of instructions, called a program, to produce the desired result.

Programming Language. Computerware can be divided into hardware and software. The five functional units of a computer built with electronic circuits and electromechanical devices constitute the hardware. Software refers to the range of standard programs or routines supplied by the manufacturer along with the computer hardware.

Programming is the name given to the 'art' of writing a program, in a programming language which is a higher level language. Every machine, depending upon its internal hardware architecture, has a unique low level language called the machine language. In a binary-coded digital computer, the machine language is made of 0s and 1s. To relieve the programmer from the tedium of writing a program in the difficult, low-level machine language, serveral hundreds of easier, high-level programming language have been developed. Of these, FORTRAN (FORmula TRANslation). ALGOL (ALGOrithmic Language) and BASIC (Beginners All-purpose Symbolic Instruction Code) are the most widely accepted general-purpose programming languages, while COBOL (Common Business Oriented Language) is the most successful programming language for business applications.

BASIC is a user "friendly" language resembling English and it is an on-line conversational language. Developed by John Kemeny and Thomas Kurtz in the mid-60s at the Dartmouth College, it has been quickly adopted by commercial time-sharing serv-

Human Computers

Prof. Hardy walked into the hospital in England where Srinivasan Ramanujan (1887-1920), the Indian mathematical wizard of the century was laid up. During the conversation, the professor casually asked Rama-nujan whether he found anything particular about the number of the cab in which he drove down. The number was 1729.

Ramanujan immediately replied 'yes'. It's a fascinating number. It is the smallest number that can be expressed as the sum of two cubes in two different ways $(1729=1^3+12^3=9^3+10^3)$.

* * *

Calculating prodigies have often enthralled the whole world with their unparalleled feats.

Bangalore-based Smt. Shakuntala Devi, demonstrated the multiplication of two 13 digit numbers 7,686, 369,774,870 x 2,465,099,745,779 pick-ed at random by the Computer Department of Imperial College, London on 18th June 1980 in 28 seconds. Her cor-rect answer was 18,947,668,177,995,426,462,773,730.

* * *

The fastest extraction of a 13th root from a 100 digit number is in 1 min 28.8 sec. by Willem Klein (Netherlands) on 7th April, 1981 at the National Laboratory for High Energy Physics, Japan.

ices. It rapidly became the most popular and widely accepted time sharing language in the computer world.

With the advent of microprocessors, in the mid-70s, BASIC was made available as a Read Only Memory (ROM) chip. In 1978, the American National Standards Institute (ANSI) standardized a subset of Basic to promote uniformity. BASIC has many dialects and several of these include features not in the ANSI Standard. CBASIC and BASICA are two of the versions of BASIC.

Computer Programming languages are often distinguished as being either compiled or interpreted languages. The users' program in the high-level programming language is called the source code. The manufacturer of the Computer supplies the required software, either a compiler or an interpreter, for every user language implemented on it. The compiler translates the source code into a machine language program called the object code. This object code together with the date, if any, in the source program is then executed in the next stage.

Thus, in a compiled language, there are two phases when the program is run - the compilation phase and the execution phase. An interpreted language, on the other hand consists of only the source program. It is translated line-by-line directly into machine language instructions, every time the program is executed for a given set of data. The Microsoft BASIC language is an interpreted language. It is easier to develop a program using an interpreted language.

Classification. Today computers can be classified as mainframe computers, minicomputers and micro-computers. Mainframe computers are expensive, large, centralized computer facilities where a Super computer (like the CRAY or CYBER) or a large computer (like the IBM 3033, CDC 7600, DEC 10, IBM 370 models etc.) is connected to several terminals. A multi-user mainframe computer has a large memory (several MB or Mega Bytes; IBM = 1 Million bytes. 1 byte = 8 bits) and is capable of speeds of the order of several millions of floating-point operations per second (Mflops). Mini-computers are also multi-user computers having lesser memory and operating at slower speeds. In the minicomputer category are the extremely popular PDP-11 and the VAX-11 computers of the Digital Equipment Corporation (DEC).

Micro-computers are based on standard micro-processors marketed by Zilog, Intel, Mitorola, etc. A micro-processor is a single silicon electronic chip which contains the ALU and the control unit - in other words, it contains the logical circuitry for a digital computer. Some of the most commonly used micro-processors are Z-80, Z-80A, Intel's 8086, 8087, 8088, 80186, 80286 and Motorola's 6800, 68000, 68010, 68020.

Micro-computers are often called *Personal Computers or PCs.* since they were originally intended to be single user devices either at the office or at home. The home computer is a PC which allows the home appliances as input/output devices - viz the T.V. and the cassette tape recorder as the output and input/output devices, respectively. Some of the extremely popular home computers are the Commodore, Sinclair and Apple.

Present-Day Micros. The micro-computer industry was revolutionized by the entry of IBM, which started marketing PCs in 1980. The IBM already controls 70% of the mainframe computer world-market. The IBM entered when the Apple, Commodore and Sinclair were dominating the micro-computer industry.

Essentially a micro-computer consists of a System Unit, the Keyboard and Visual Display Unit (VDU). The Printer is an auxiliary unit essential to get the output from the micro-computer as a hard-copy. The standard typewriter keys - viz A to Z, 0 to 9 and certain special characters together constitute the alphanumeric characters - are an essential part of all the micro-computer keyboards, which also have two or three additional groups of keys. One of these is a set of numeric keys (0 to 9) arranged as in a calculator for ease of data entry.

This same set may also be used (in a certain mode) to move the cursor on the screen of the VDU. A set of ten special Function Keys (F1 to F10) exist as a group and these can be programmed to perform special tasks (in the programming mode). Besides these, there are special keys called program control keys. A total of 83 keys are on the keyboard of an IBM PC and the keyboard is connected to the System Unit of the Micro-computers via a coiled cable.

The VDU is the video display terminal for the micro-computer system. This can be either a monochromatic (black and white) or colour monitor. The normal printer interface is for the monochromatic display unit.

A Colour/Graphics Monitor Adaptor board (or printed circuit) is essential as an interface to enable the use of a colour monitor. (A colour TV set can also be used with a radio frequency modulator). The monochromatic or low-resolution Alpha-Numeric (A/N) mode outputs on the screen of the VDU 25 lines of 40 characters each.

The System Unit contains the heart of the micro-computer - a micro-processor (Intel 8088 in the case of an IBM - PC which can address upto IMB of memory and has a speed of about 0.65 million operations per second), the dynamic Random Access Memory (RAM), an extended Microsoft BASIC as Read Only Memory (ROM, approximately 40K in capacity), floppy disk drive (s) for auxiliary storage, a built-in speaker and some (5 to 8) expansion slots for system enlargement. Additional dynamic memory (RAM) boards can be used to enhance the memory of the micro-computer. The ROM stores permanently programs essential for the operation of the micro-computer.

Besides the Microsoft BASIC interpreter language stored in ROM, the Basic Input/Output System called BIOS and the bootstrap loader are also in ROM. BIOS is a collection of programs that control the transfer of characters between the micro-processor and the various input/output devices like the VDU, Keyboard, Printer, etc. connected to it. The bootstrap loader starts the Computer Operating System from the auxiliary disk storage (either the Floppy Disk Drive, FDD or the Hard Disk Drive, HDD).

Modular. The micro-computer is modular in design and the modules (or blocks) are interconnected through a bus, which was first proposed for the PDP-11 mini-computer and has since become standardized in its design characteristics. The º Bus is a micro-processor version of the UNIBUS of PDP-11, while INTEL came up with the MULTIBUS-based computer and Motorola has the VME bus-based computer. A typical bus-based single board or mother board micro-computer system has its modules interconnected as shown in figure.

The micro-processor or (silicon) chip combines the ALU and the Control Unit. The memory (ROM and RAM), the micro-processor, interfaces for the Keyboard, VDU, etc. expansion slots, speaker and timing circuits are all on the system board of mother board of a micro-computer system.

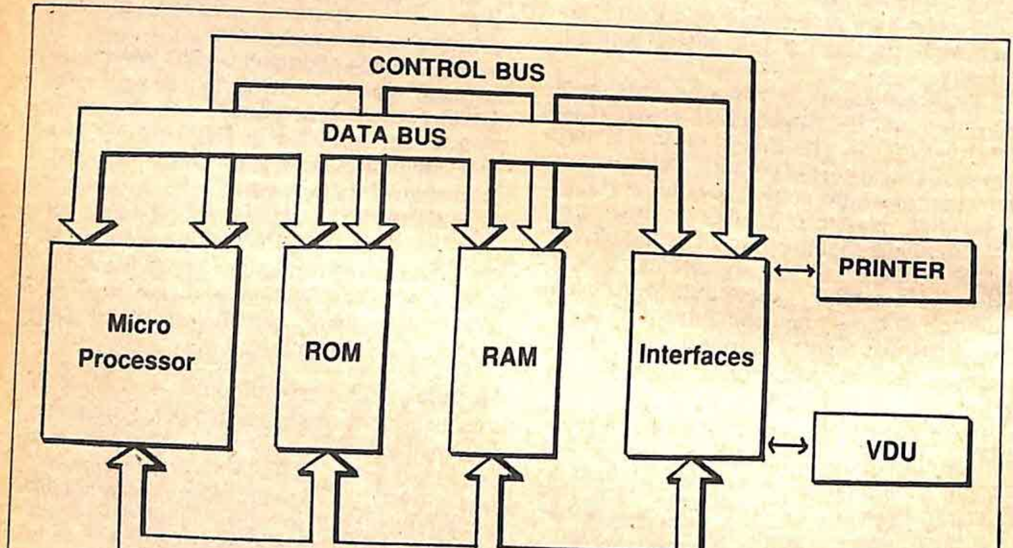
Most of the 8-bit micro-processsors can only address 64KB of memory at any one time, while most 16-bit micro-processors can address 256KB to 16MB of memory. Moreover, 16-bit micro-processors process data faster, at 2 to 10 times the speed of an 8-bit micro-processor.

Microsoft BASIC is a version of BASIC which is standard with the IBM - PC. The BAISC interpreter is contained in 40K of ROM and the IBM PC uses three versions of BASIC called Cassette BASIC (or C BASIC) disk BASIC and Advanced BASIC (or BASICA). The first two are used when the PC has a Cassette or Disk interface, while Advanced BASIC has all the capabilities of the other two as well as additional features necessary for the colour/graphics mode.

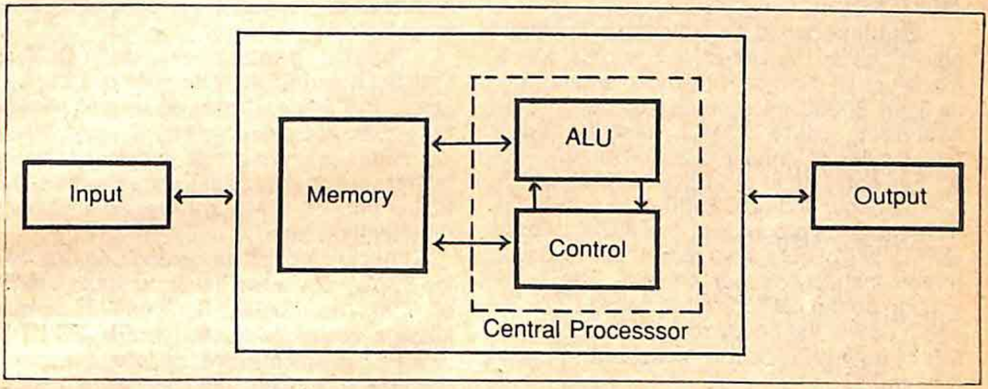
Desk Top System. The fourth generation micro-computer like the IBM-PC is a small desk-top system. The System Unit is 20" wide 16" deep and 5.5" high, weighing only 28 pounds with two floppy disk drives (FDDs) each of 160KB or 320KB capacity. It employs the Intel 8088 micro-processor and has 16KB of RAM, five expansion slots and functions under the Operating System called PC-DOS.

The Operating System is a program supplied by the microcomputer manufacturer. It directs and handles the efficient transport of data within various parts of the Computer such as CPU, Memory, Keyboard, Floppy Diskettes, VDU etc. When power is switched on to the microcomputer the operating system has to be first loaded (before the user programme is entered) and this process is called booting.

Microsoft introduced the Operating System called MS-DOS for the Intel 8088 micro-processor, which was offered to IBM who made some changes and renamed it as PC-DOS. IBMss PC-DOS is a version of Micro-



Bus-based Micro Computer System



Traditional von Neumann architecture

soft's XENIX operating system, which in turn is a version of the UNIX operating system originally developed by Western Electric.

MS-DOS or PC-DOS is capable of managing more memory and provide better graphics than the operating system called CP/M-80, which was developed by Digital Research for 8-bit microcomputers. The version CP/M-86 is the operating system developed by Digital Research for 16-bit microprocessors and MP/M-86 is the multi-user version of the same operating system.

All operating systems have in-built commands and small programmes residing on disk, which when run behave like commands. PC-DOS has nearly 50 commands for system settings, disk maintenance, file maintenance, etc. most of which are understandable from their names (while CP/M-80 has 12 commands).

The version of PC-DOS implemented on the IBM-PC are called DOS 1.0 and DOS 1.1. In the spring of 1983, IBM released an extended version of the IBM-PC, called the IBM-PC/XT. The XT includes a 10M Winchester or hard-disk drive (HDD) 128KB of RAM expandable to 640KB, one 360KB floppy disk drive (FDD), an asynchronous Communications Adapter, and 8 expansion slots. Together with the XT, a new version of DOS, viz. DOS 20, was made available containing a number of enhancements over the earlier versions.

Floppy Diskette. The most widely accepted form of auxiliary storage used in microcomputers is the floppy disk storage. A floppy diskette is a round vinyl disk enclosed within a plastic cover. The 5¹/₄" diskettes are becoming universal and are fast replacing the 8" diskettes. Depending upon the Operating System under which the microcomputer functions and the nature of the FDD, information can be stored on the floppy diskette either on one-side (single-sided) or two sides (Double-Sided) and in single density (SD) or double density (DD). Thus floppy diskettes belong to one of four categories SSSD, SSDD, DSSD or DSDD. Density refers to a diskette's recording format, which in turn affects its capacity. Roughly the capacities of single-sided single density and single-sided double density 51/4" diskettess are 94KB and 140 to 185KB, respectively.

The Winchester or hard disk drives can store much more data than what can be stored on a floppy diskette. Hard disks come sealed and they cannot be removed or changed like floppy diskettes. Often floppy disk systems are used in conjunction with the Winchester disk system. Hard disks of capacity 10MB to 86MB are now available on micro-computers, which support 1 to 4 such drives (HDDs).

IBM introduced an Advanced Technology PC, called the IBM-PC/AT, in 1984, which made use of the more advanced and powerful Intel 80286 microprocessor capable of addressing 16MB of main memory and 1 Billion bytes of virtual memory. The IBM-PC/AT has a minimum of 512KB of RAM, which can be expanded upto 3 MB, about 150,000 transistors. Its processor (Intel 80286) works with 16 bits of data at speeds of upto 1.5 to 2 million instructions per second. The DOS version on the IBM-PC/AT is called DOS 30 and it allows the floppy diskette to store 1.2 MB of data on a double-sided high density diskette.

The Printer. The Printer usually used along with a microcomputer is a dot matrix printer, wherein a 9 x 9 matrix pattern is used to form the characters. Character sizes may range from 5 to 16.5 characters per inch. On an 8 inch line width, pitch sizes of 5, 8.25, 10 and 16.5 produce a maximum of 40, 66, 80 and 132 characters per line, respectively. The dot matrix printer is connected to a parallel communications port at the back of the System Unit.

Popular printers like the CITOH, OKIDATA and EPSON have 80 or 132 characters per line and are capable of printing from 160 to 400 characters per second. These dot matrix printers are bi-directional. When higher speeds are required one should resort to line printers which are rugged and much more expensive.

Winchester disk drives and Color/Graphics display obviously enhance the capability of a microcomputer. Additional hard disk storage can be added to the IBM-PC/XT or IBM-PC/AT with the IBMs optional expansion unit. The expansion unit consists of a 10MB or 20 MB HDD and 8 expansion slots. The resident RAM on the system board of the PC/XT can be expanded from 128 KB to 256 KB and additional RAM expansion boards can be added to expand the RAM upto 640 KB. In the case of the PC/AT, the RAM can be expanded with 5 more 512 KB boards.

SCIENCE GLOSSARY

Acarology: Branch of Zoology dealing with ticks and mites.

Acoustics: The study of sound (or the science of sound).

Acrobatics: The art of performing acrobatic feats (gymnastics).

Aerodynamics: (i) The branch of mechanics that deals with the motion of air and other gases. (ii) The study of the motion and control of solid bodies like aircraft, missiles, etc. in air.

Aeronautics: The science or art of flight.

Aerostatics: The branch of statics that deals with gases in equilibrium and with gases and bodies in them.

Aesthetics: The philosophy of fine arts.

Aetiology: The science of causation.

Agrobiology: The science of plant life and plant nutrition.

Agronomics: The science of managing land or crops.

Agronomy: The science of soil management and production of field crops.

Agrostology: The study of grasses.

Alchemy: Chemistry in ancient times.

Anatomy: The science dealing with the structure of animals, plants or human body.

Anthropology: The science that deals with the origin and physical and cultural development of mankind.

Arboriculture: Cultivation of trees and vegetables.

Archaeology: The study of antiquities.

Astrology: The ancient art of predicting the course of human destinies with the help of indications deduced from the position and movement of the heavenly bodies.

Astronautics: The science of space travel.

Astronomy: The study of the heavenly bodies.

Astrophysics: The branch of astronomy concerned with the physical nature of heavenly bodies.

Bacteriology: The study of bacteria.

Biochemistry: The study of chemical processes of living things.

Biometry: The application of mathematics to the study of living things.

Bionics: The study of functions, characteristics and phenomena observed in the living world and the application of this knowledge to the world of machines.

Bionomics: The study of the relation of an organism to its environment.

Bionomy: The science of the laws of life.

Biophysics: The physics of vital processes (living things).

Botany: The study of plants.

Calisthenics: The systematic exercises for attaining strength and gracefulness.

Ceramics: The art and technology of making objects from clay etc. (pottery).

Chemistry: The study of elements and their laws of combination and behaviour.

Chemotherapy: The treatment of disease by using chemical substances.

Chronobiology: The study of duration of life.

Chronology: The science of arranging time in periods and ascertaining the dates and historical order of past events.

Conchology: The branch of zoology dealing with the shells of molluscs.

Cosmogony: The science of the nature of heavenly bodies.

Cosmography: The science that describes and maps the main features of the universe.

Cosmology: The science of the nature, origin and history of the universe.

Criminology: The study of crime and criminals.

Cryptography: The study of cyphers (secret writings).

Crystallography: The study of structure, forms and properties of crystals.

Cryogenics: The science dealing with the production, control and application of very low temperatures.

Cytochemistry: The branch of cytology dealing with the chemistry of cells.

Cytogenetics: The branch of biology dealing with the study of heredity from the point of view of cytology and genetics.

Cytology: The study of cells, especially their formation, structure and functions.

Dactylography: The study of fingerprints for the purpose of identification.

Dactyliology: The technique of communication by signs made with the fingers. It is generally used by the deaf.

Ecology: The study of the relation of animals and plants to their surroundings, animate and inanimate.

Econometrics: The application of mathematics in testing economic theories.

Economics: The science dealing with the production, distribution and consumption of goods and services.

Embryology: The study of development of embryos.

Entomology: The study of insects.

Epidemiology: The branch of medicine dealing with epidemic diseases.

Epigraphy: The study of inscriptions.

Ethnography: A branch of anthropology dealing with the scientific description of individual cultures.

Ethics: Psychological study of moral principles.

Ethnology: A branch of anthropology that deals with the origin, distribution and distinguishing characteristics of the race of mankind.

Ethology: The study of animal behaviour.

Etymology: The study of origin and history of words.

Eugenics: The study of the production of better offspring by the careful selection of parents.

Genealogy: The study of family ancestries and histories.

Genecology: The study of genetical composition of plant population in relation to their habitats.

Genesiology: The science of generation.

Genetics: The branch of biology dealing with the phenomena of heredity and the laws governing it.

Geobiology: The biology of terrestrial life.

Geobotany: The branch of botany dealing with all aspects of relations between plants and the earth's surface.

Geochemistry: The study of the chemical composition of the earth's crust and the changes which take place within it.

Geography: The science of the earth's surface, physical features, climate, population, etc.

Geology: The science that deals with the physical history of the earth.

Geomedicine: The branch of medicine dealing with the influence of climate and environmental conditions on health.

Geomorphology: The study of the characteristics, origin and development of landforms.

Geophysics: The physics of the earth.

Gerontology: The study of old age, its phenomena, diseases, etc.

Heliotherapy: The sun cure.

Histology: The study of tissues.

Horticulture: The cultivation of flowers, fruits, vegetables and ornamental plants.

Hydrodynamics: The mathematical study of the forces, energy and pressure of liquid in motion.

Hydrography: The science of water measurements of the earth with special reference to their use for navigation.

Hydrology: The study of water with reference to its occurrence and properties in the hydrosphere and atmosphere.

Hydrometallurgy: The process of extracting metals at ordinary temperature by leaching ore with liquids.

Hydropathy: The cure of disease by the internal and external use of water.

Hydroponics: The cultivation of plants by placing the roots in nutrient solutions rather than in soil.

Hydrostatics: The mathematical study of forces and pressures in liquids.

Hygiene: The science of health and its preservation.

Iconography: Teaching with aid of pictures and models.

Iconology: The study of symbolic representations.

Jurisprudence: The science of law.

Lexicography: The writing or compiling of dictionaries.

Mammography: Radiography of the mammary glands.

Metallography: The study of the crystalline structures of metals and alloys.

Metallurgy: The process of extracting metals from their ores.

Meteorology: The science of the atmosphere and its phenomena.

Metrology: The scientific study of weights and measures.

Microbiology: The study of minute living organisms, including bacteria, moulds and pathogenic protozoa.

Molecular biology: The study of the structure of the molecules which are of importance in biology.

Morphology: The science of organic forms and structures.

Mycology: The study of fungi and fungus diseases.

Neurology: The study of the nervous system, its functions and its disorders.

Neuropathology: The study of diseases of the nervous system.

Numerology: The study of numbers, study of the date and year of one's birth to determine their influence on one's future life.

Numismatics: The study of coins and medals.

Odontography: A description of the teeth.

Odontology: The scientific study of the teeth.

Optics: The study of nature and properties of light.

Ornithology: The study of birds.

Orthoepy: The study of correct pronunciation.

Orthopaedics: The science of prevention, diagnosis and treatment of diseases and abnormalities of musculoskeletal system.

Osteology: The study of the bones.

Osteopathology: Any disease of bones.

Osteopathy: A therapeutic system based upon detecting and correcting faulty structure.

Palaeobotany: The study of fossil plants.

Palaeontology: The study of fossils.

Palynology: The study of fossil pollen (pollen analysis).

Pathology: The study of diseases.

Pedagogy: The art or method of teaching.

Pharyngology: The science of the pharynx and its diseases.

Phenology: The study of periodicity phenomena of plants.

Philately: The collection and study of postage stamps, revenue stamps, etc.

Philology: The study of written records, their authenticity, etc.

Phonetics: The study of speech, sounds and their production, transmission, reception etc.

Photobiology: The branch of biology dealing with the effect of light on organisms.

Phrenology: The study of the faculties and qualities of mind from the shape of the skull.

Phthisiology: The scientific study of tuberculosis.

Phycology: The study of algae.

Physical science: The study of natural laws and process other than those peculiar to living matters, as in Physics, Chemistry and Astronomy.

Physics: The study of the properties of matter.

Physiography: The science of physical geography.

Physiology: The study of the functioning of the various organs of living beings.

Phytogeny: Origin and growth of plants.

Pomology: The science that deals with fruits and fruit growing.

Psychology: The study of human and animal behaviour.

Radio Astronomy: The study of heavenly bodies by the reception and analysis of the radio frequency electro-magnetic radiations which they emit or reflect.

Radiobiology: The branch of biology which deals with the effects of radiations on living organisms.

Radiology: The study of X-rays and radioactivity.

Rheology: The study of the deformation and flow of matter.

Seismology: The study of earthquakes and the phenomena associated with it.

Selenology: The scientific study of moon, its nature, origin, movements, etc.

Sericulture: The raising of silk worms for the production of raw silk.

Sociology: The study of human society.

Spectroscopy: The study of matter and energy by the use of spectroscope.

Teleology: The study of the evidences of design or purpose in nature.

Telepathy: Communication between minds by some means other than sensory perception.

Therapeutics: The science and art of healing.

Topography: A special description of a part or region.

Toxicology: The study of poisons.

Virology: The study of viruses.

Zoology: The study of animal life.

Scientific Instruments

Altimeter: A special type of aneroid barometer, used in measuring altitudes.

Ammeter: An instrument to measure the strength of an electric current.

Anemometer: An instrument to measure the velocity and find the direction of the wind.

Audiometer: An instrument to measure difference in hearing.

Barometer: An instrument used for measuring atmospheric pressure.

Binoculars: An optical instrument designed for magnified view of distant objects by both eyes simultaneously.

Calorimeter: An instrument for measuring quantities of heat.

Chronometer: A clock that keeps very accurate time as the one that is used to determine longitude at sea.

Clinical Thermometer: A thermometer for measuring the temperature of human body.

Colorimeter: An instrument for comparing intensities of colour.

Commutator: An instrument to change or reverse the direction of an electric current. In dynamo used to convert alternating current into direct current.

Computer: A technical device designed to find instantaneous solutions of huge and complex calculations based on the information already fed.

Dynamo: A device for converting mechanical energy into electrical energy.

Dynamometer: An instrument for measuring the electrical power.

Electroscope: An instrument for detecting the presence of electric charge.

Galvanometer: An instrument for measuring electric current.

Hydrometer: An instrument for measuring the relative density of liquids.

Hydrophone: An instrument for measuring sound under water.

Hygrometer: An instrument for measuring the relative humidity of the atmosphere.

Hygroscope: An instrument to show the changes in atmospheric humidity.

Lactometer: An instrument for measuring the relative density of milk.

Magnetometer: An instrument used to compare the magnetic moments and fields.

Manometer: An instrument to measure the pressure of gases.

Mariner's Compass: An apparatus for determining direction, graduated to indicate 32 directions. The "N" point on the dial indicates north pole and the "S" point, south pole.

Micrometer: An instrument used for accurately measuring small distances or angles.

Microscope: An instrument for magnified view of very small objects.

Periscope: An apparatus for viewing objects lying above the eye level of the observer and whose direct vision is obstructed.

Photometer: An instrument for comparing the luminous intensity of the sources of light.

Plantimeter: A mechanical integrating instrument to measure area of a plane surface.

Pyknometer: An instrument used to measure the density and coefficient of expansion of a liquid.

Pyrheliometer: An instrument for measuring solar radiations.

Pyrometers: Thermometers to measure high temperatures.

Quadrant: An instrument for measuring altitudes and angles in navigation and astronomy.

Quartz clock: A highly accurate clock used in astronomical observations and other precision work.

Radio Micrometer: An instrument for measuring heat radiations.

Rain Gauge: An instrument for measuring rainfall.

Refractometer: An instrument used to measure the refractive index of a substance.

Resistance Thermometer: Used for determining the electrical resistance of conductors.

Salinometer: A type of hydrometer used to determine the concentration of salt solutions by measuring their densities.

Seismograph: An instrument used for recording the intensity and origin of earthquake shocks.

Sextant: An instrument used for measurement of angular distances between two objects.

Spectroscope: An instrument used for spectrum analysis.

Spectrometer: A type of spectroscope so calibrated as to make it suitable for the precise measurement of refractive indices.

Spherometer: An instrument used for accurately measuring the curvature of spherical objects.

Spygmomanometer: An apparatus for measuring blood pressure.

Spring Balance: An instrument used to measure the weight of a body. It is preferred only when quick but approximate determinations are to be carried out.

Stereoscope: An optical device to see two dimensional pictures as having depth and solidity.

Stethoscope: A medical instrument for hearing and analysing the sound of heart and lungs.

Stroboscope: An instrument used for viewing the objects moving rapidly with a periodic motion and to see them as if they were at rest.

Tangent galvanometer: An instrument for measuring the strength of direct current.

Telemeter: An apparatus for recording physical events happening at a distance.

Teleprinter: A communication medium for automatic sending, receiving and printing of telegraphic messages from distant places.

Telescope: An instrument for viewing distant objects as mangified.

Television: An instrument used for transmitting the visible moving images by means of wireless waves.

Thermometer: An instrument to measure the temperature.

Thermoscope: An instrument used for measuring the temperature changes (approximately) of the substance by noting the corresponding change in volume.

Thermostat: An automatic device for regulating constant temperatures.

Transistor: A small device which may be used to amplify currents and perform other functions usually performed by a thermionic valve.

Vernier: An adjustable scale for measuring small sub divisions of scale.

Viscometer: An instrument for measuring the viscosity, i.e., the property of resistance of a fluid to relative motion within itself.

Voltmeter: An instrument to measure potential difference between two points.

PART TWO

WORLD PANORAMA

WORLD UPDATE

UNITED EUROPE OF 1992

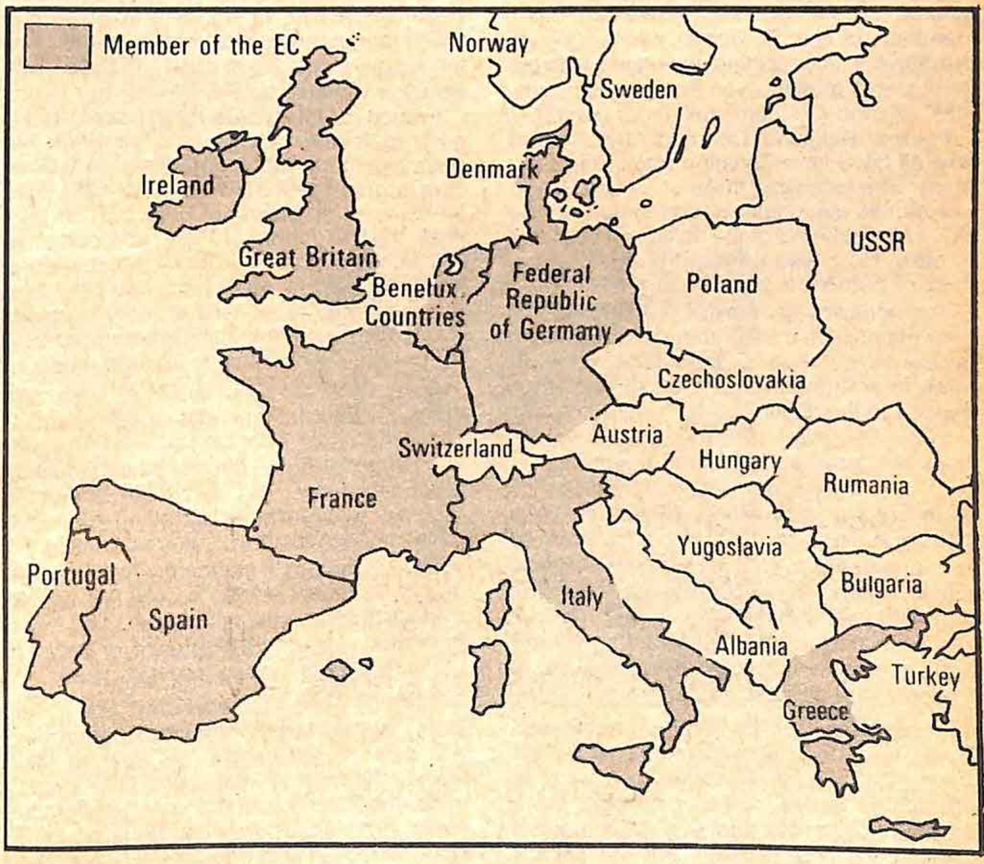
Twelve European Countries–Belgium, Denmark, Federal Republic of Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal and United Kingdom–have combined to form European Community, which will bloom into final shape in 1992. For all their cultural and historical differences, they have decided to build their future together. For an area stretching from Scotland to Crete, from Skagen to the Algarve, with all its different structures and traditions, it is often hard to work out common objectives and to devise measures that will be equally effective for everyone.

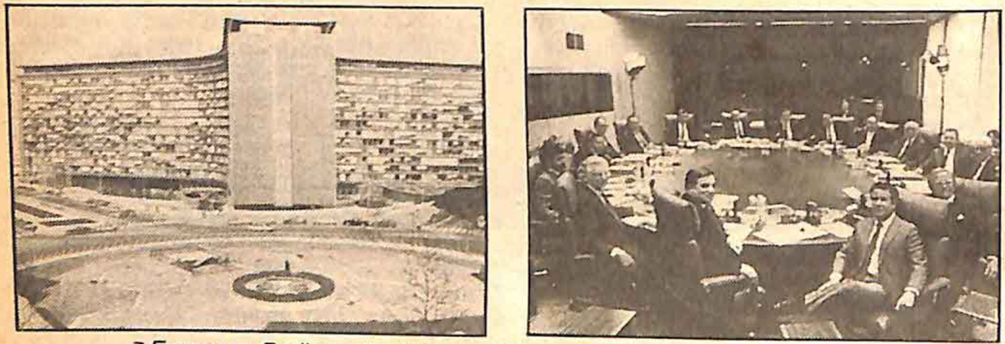
Continental Europe has so far escaped a proper recession, thanks to robust growth in Germany. But Germany is heading for choppy waters–and its neighbours may be in danger of being dragged under.

The European Community is still far from being a single economic unit, if the diverging economic growth rates of its 12 members are anything to go by. The 1.5 per cent average growth that was forecast for the EC in 1991 concealed as much as it revealed. According to the Economist's latest poll of forecasters, Britain's GDP was expected to decline by 1.8 per cent in 1991–the deepest recession of any big industrial economy–while Germany was forecast to cruise at a seemingly robust 3.3 per cent. In the middle, the rest of continental Europe has slowed sharply, but all the countries have avoided a recession–at least by its technical definition, as two consecutive quarters of GNP decline.

While the English-speaking world sank into recession, continental Europe has been kept afloat by the boom in Germany's domestic demand–and hence its imports–following unification. Germany's imports from the rest of the EC have surged by 30 per cent since 1989. Its surplus with the rest of the EC fell from DM 94 billion ($50 billion) in 1989 to an annualised (and unified) DM 21 billion in 1991.

At the same time, however, two other developments have been cutting growth in the rest of the EC, despite Germany's pull:





European Parliment building and European Commission is session

the rise in German interest rates as a result of its swollen budget deficit and climbing inflation. The need to keep their currencies firm against the D-mark has prevented other members of the European exchange-rate mechanism from cutting their own interest rates to spur growth, even though most countries' inflation rates are well under control.

France, Belgium, Denmark and Ireland now all have lower inflation rates than Germany. The recession in America and Britain has dented countries' exports to outside the EC. The weakness of the dollar last year and in early 1991 also eroded the competitiveness of European exporters.

The fortunes of individual EC countries over the past year have therefore depended on the relative size of their trade with Germany and America and the sensitivity of their exports to the dollar.

The economies with the closest trading links with Western Germany have held up best. For example, Holland's exports to Germany are equivalent to 15 per cent of its GDP and Belgium's 12 per cent, compared with only 3.4 per cent in France, Italy and Britain. Industrial output has continued to grow this year in both Belgium and Holland, albeit at a slower rate in recent months. Most seers expect them to notch up GNP growth of around 2.4 per cent in 1991.

France and Italy, by contrast, along with Britain, have been hit harder by the recession in America. In all three countries exports to the Unitied States not only account for a bigger chunk of their total exports compared with Holland and Belgium, but the dollar's weakness earlier in 1991 has toughened the competition they faced from American firms in other markets. France is typical. While its trade deficit with Germany shrunk by $ 8 billion (at an annual rate) between 1989 and the first five months of 1991, its deficit with America widened by $ 6 billion.

French industrial production has started to grow again after falling during the winter, but unemployment has already risen to 9.5 per cent from last year's low of 8.8 per cent. GDP fell in the fourth quarter of 1990, but was then flat in the first quarter of 1991. and increased in the second quarter. Technically, therefore, it has missed a recession, but businessmen's gloomy responses in recent surveys suggest an economy which is bumping along the bottom rather than one about to rebound.

Italy's GDP has not suffered even one quarter's decline, but that is little comfort given its paltry 0.7 per cent growth in the year to the first quarter. Moreover, its industrial production fell 0.9 per cent in the 12 months to June. Italian exports are being squeezed because, with the lira's value tied within the ERM, the country's stubbornly high inflation rate (6.8 per cent in 1991 to July) has eroded manufacturers' competitiveness. The latest forecasts suggest GNP growth of only 1.5 per cent in both France and Italy 1991,

The other large EC economy, Spain, has also slowed sharply, with industrial production down 2 per cent in the year to May. Forecasters are still expecting GDP growth of around 2.3 per cent this year, which might sound brisk anywhere else, but it would be slow compared with Spain's average growth rate of almost 5 per cent in the past four years.

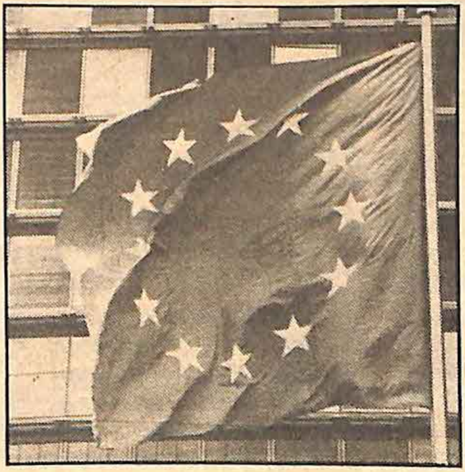
So long as the German speed-boat continued to roar, the rest of continental Europe was towed along behind. Indeed, they could soon have looked forward to stronger growth as America's economy picks up. Germany, however, may be unable to keep up its hectic pace.

Most economic forecasters have pencilled in 3.5 per cent GNP growth for Western Germany in 1991, followed by two per cent in 1992. At first sight this suggests little danger. But that forecast conceals an abrupt slowdown during the second half of this year.

A mild recession in Germany could be disastrous for the rest of Europe. Instead of recovery, economies would continue to stagnate during the second half of this year. Unless German demand drops precipitously, which still seems unlikely, the rest of the continent might continue to escape a technical recession on the back of recovery in America and the dollar's almost 20 per cent rise against EC currencies since February 1991. But to many Europeans it would certainly feel like recession, since growth would be too weak to prevent a further increase in unemployment. The jobless rate is already on the rise again in all EC economies apart from Germany, Holland and Spain.

Europe's prospects in 1992 depend on when German interest rates start to fall. Germany's partners should be worried that the Bundes-bank may need to keep rates high until at least early next year, or even increase them further, to check inflationary pressures and send a warning shot to trade unions before the next pay round.

*(Excerpts from an article in **The Economist**, London)*



HISTORY OF THE COMMUNITY

Twelve European countries with an area stretching from Scotland to Crete, from Skagen to the Algarve, have combined to form the European Community. For all their cultural and historical differences, they have decided to build their future together.

On 9 May 1950 the then French Foreign Minister, Robert Schuman, *proposed coordinating the coal and steel production of countries which had waged war for centuries and placing it under the control of a common institution to be called the High Authority. The Treaty establishing the European Coal and Steel Community (ECSC) was signed in 1951, and followed in 1957 by the Treaties establishing the European Economic Community (EEC) and the European Atomic Energy Community (Euratom). The term European Community is now commonly used. In 1986 the Treaties were amended and extended by the Single European Act.*

There were six founder members: Belgium, Germany, France, Italy, Luxembourg and the Netherlands. These were joined in 1973 by Denmark, Ireland and the United Kingdom, with Greece following in 1981 and Portugal and Spain in 1986.

***The European Parliament** has a consultative and supervisory role in the Community. Its members are elected for five years by direct universal suffrage. In the European Parliament there are no national parties: Members belong to groups constituted on a European basis. Parliament considers Commission proposals and gives its opinion before the Council takes a decision. It plays a part in establishing the draft Community budget, has a final say on adoption or rejection of the draft and keeps a watchful eye on the budget's implementation. By a vote of censure Parliament can compel the Commission to resign.*

***The Court of Justice** upholds the law in the implementation and interpretation of the Community Treaties. It consists of 13 judges and six advocates-general, who are appointed for a six-year term by agreement between the governments. There is at least one judge from each of the 12 Member States.*

***The Council** is required to ensure coordination of Member States' general economic policies. It has power to take decisions in implementing the objectives of the Community Treaties. In the Council the Member States are represented either by their Foreign Minister or by the Minister responsible for the particular subject being dealt with at a given meeting. Each Member State takes the chair of the Council for six months, in 'absolute' alphabetical order (i.e. by the names of the countries in their own language). The Heads of State or Government meet three times a year as the European Council'.*

***The Commission** sees to the proper functioning and development of the common market and has the right to initiate Community Policy. It is, so to speak, the 'engine room' of the Community.*

***The Court of Auditors:** The Court of Auditors, whose 12 members (one from each Member State) are appointed unanimously by the Council for six years after consultation with Parliament, examines whether the Community's revenue has been received and its expenditure incurred in a lawful and regular manner and whether the financial management has been sound.* ❑

The Garland Countries

South Asia is a region of garland countries. Garland symbolises its unity in diversity. It is evocative of the common culture and ethos that bind them together as a people of one great heritage.

The landmass of the South Asian Countries which have embraced the idea of regional co-operation under SAARC – Bangladesh, Bhutan, India, Nepal, Pakistan, Srilanka and Maldives -is 4.38 million sq km or about one tenth of Asia's total of 44.3 m sq km and the population of 1073.5 m. is about a third of Asia's total of 3000 m.

The mosaic of South Asia's diverse cultures and religions right from the largest segment of Hindus followed by Muslims, Buddhists, Christians, Sikhs and Jains has spread its influence far beyond the sub-continental periphery.

The white coral beaches, blue lagoons and well-designed tourist facilities of the Maldives. The bright beaches, green and hilly tea gardens and Buddhist temples of Sri Lanka. The lush riverine beauty, plus the sensuous arts of Bangladesh. The splendour of India's historical heritage and its fine convention and other facilities. Nepal's Everest and Kathmandu – its city of antiquity. Pakistan's Karakoram summity, archaeological wonders and imposing Mughal legacy at Lahore.

The garland's image is one of fragrance and colour, nature's bountiful gifts. It rubs off on their Islands and helps to rub out their poor image. People stop thinking of South Asia exclusively in terms of poverty, dirt, decay and sporadic violence. The garland helps them focus on the more flattering side which is both bright and beautiful.

SOUTH ASIA AT A GLANCE

Country	Capital	Area (sq km)	Population (million)	GNP per capita (US dollar)
Bangladesh	Dhaka	1,43,999	109.6	175
Bhutan	Thimphu	46,500	1.4	160
India	New Delhi	3,287,263	817.4	330
Maldives	Male	298	0.2	470
Nepal	Kathmandu	147,141	18.8	170
Pakistan	Islamabad	796,095	109.2	365
Sri Lanka	Colombo	65,610	16.9	420
Total		4,386,906	1073.5	

BANGLADESH

Cap: Dhaka; **Area:** 143,999 sq km; **Pop:** 109.6 m; **Lang:** Bangla; **Literacy:** 33%; **Rel:** Islam; **Currency:** Taka, **US$1**=31.67 Taka; **GNP per capita:** $175.

Physiography: Bangladesh is bounded west and north-west by West Bengal (India), north by Assam and Meghalaya (India), east by Assam, Tripura (India) and Burma, south by the Bay of Bengal.

The country has a tropical monsoon climate and suffers from periodic cyclones. The average temperature is 19°C (67°F) from October to March, rising to 29°C (84°F) between May and September. The average annual rainfall in Dhaka is 188 cm (74 in), of which about three-quarters occurs between June and September.

About 95% of the population speak Bengali, the state language, while the remainder mostly use tribal dialects. More than 85% of the people are Muslims, and there are small minorities of Hindus, Buddhists and Christians.

Bangladesh's population (1981 census), is 87,120,000. An adjustment for under enumeration produced a revised census figure of 89,912,000 of whom 14.09 m. were urban and 46.3 m. were male. Population estimate, 1989, 109.6 m. In 1984 the birth-rate was 33.6 per 1,000 population; death-rate, 11.88; infant mortality 121 per 1,000 live births. Life expectancy (1983) 53.9 years (60.3 in urban areas).

Principal Towns

(Population at 1981 census)

Dhaka (Capital)	3,430,312*
Chittagong (Port)	1,391,877
Khulna (Port)	646,359
Rajshahji	253,740
Comilla	184,132
Barisal	172,905
Sylhet	168,371
Rangpur	153,174
Jessore	148,927
Saidpur	126,608

*Including Narayanganj (population 270,680 in 1974)

History: Bangladesh was formerly East Pakistan, one of the five provinces into which Pakistan was divided at its creation, when Britain's former Indian Empire was partitioned in August 1947. East Pakistan and the four western provinces were separated by about 1,000 miles (1,600 km) of Indian territory. East Pakistan was formed from the former Indian province of East Bengal and the Sylhet district of Assam. Although the East was more populous, government was based in West Pakistan.

East Pakistan became an independent entity named Bangladesh in 1972, following civil war in which India actively supported the

Torch-bearer of Peace

The Gandhi Ashram in Bangladesh, situated in the remote sleepy Village of Joyag in Noakhali district is a standing testimony to the communal harmony prevalent in the days of turbulence.

While Noakhali was under heavy strain due to India's Babri Mosque Ram Temple issue, the Ashram, 30 km away from the nearest town remained calm and a safe haven for all peace-loving people.

In this Village 44 years ago, Mahatma Gandhi stayed for a few days during his famous "Peace Mission" and finally staged 'Satyagraha' to defuse several communal violences which left many dead and damaged properties both in the former East Pakistan and West Bengal in the late forties.

The mantle of leadership of the Ashram fell from the late Charu Chowdhury to Ms. Jharna Dhara Chowdhury in 1990.

East. Leader of this independence movement, Sheikh Mujibur Rahman became the first Prime Minister.

In January 1975 parliamentary government was replaced by a presidential form of government. Sheikh Mujib became President, assuming absolute power, and created the Bangladesh Peasants' and Workers' Awami League. In February Bangladesh became a one-party state.

In August 1975 Sheikh Mujib and his family were assassinated in a right-wing coup, led by a group of Islamic army majors. Chief of Army Staff, Major-Gen. Ziaur Rahman (Gen. Zia) took over power in November 1975. In June 1978 the country's first direct presidential election resulted in a clear victory for Zia, who formed a Council of Advisers. Parliamentary elections followed in February 1979 in which President Zia's Bangladesh Nationalist Party (BNP) received 49% of the total votes and won 207 of the 300 directly elective seats in the Jatiya Sangsad.

Political instability recurred, however, when Gen. Zia was assassinated on 30 May 1981 during an attempted military coup. The elderly Vice-President, Justice Abdus Sattar, took over as acting President but was faced by strikes and demonstrations over the execution of several officers who had been involved in the coup.

On winning the National Presidential election in January 1982, Sattar formed a National Security Council which included military personnel, led by the Army Chief of Staff, Lt. Gen. Hossain Mohammad Ershad.

On 23 March 1982 there was a bloodless military coup, by which Lieut. Gen. Ershad became chief martial law administrator. President Sattar was deposed. The Constitution was suspended and parliament ceased to function. Assanuddin Chowdhury was sworn in as civilian president on 27 March. Lieut. Gen. Ershad assumed the presidency on 11 Dec. 1983.

Although the Government's economic policies achieved some success and gained a measure of popular support for Ershad, there were increasing demands in 1983 for a return to democratic government. The two principal opposition groups that emerged were a 15-party alliance, headed by a faction of the Awami League under Sheikh Hasina Wazed (daughter of the late Sheikh Mujib), and a seven-party group which was led by a faction of the BNP under the former President Sattar (who died in October 1985) and Begum Khalida Zia (widow of Gen. Zia). In September 1983 the two groups formed an alliance, the Movement for the Restoration of Democracy (MRD), and jointly issued demands for an end to martial law, for the release of political prisoners and for the holding of parliamentary elections before any others.

Martial law ended on 10 Nov. 1986. The Constitution (Seventh Amendment) Act restored the constitution but protected the legality of President Ershad's decrees under martial law.

Parliament has one chamber of 300 members directly elected every 5 years by citizens over 18. There are 30 seats reserved for women members elected by Parliament.

In Jan. 1986 a National Executive Committee was formed and the National Party launched, composed of government supporters. Gen. Ershad was re-elected President on 15 October, 1986. The National Party won the general election of March 1988, but there was a low turn-out and the result was disputed.

The Constitution (ninth amendment) Act 1989, restricted a person hold office as President for two consecutive terms and made the post of Vice-President elective.

Gen. Ershad was deposed and arrested after a popular uprising in December 1990. Mr. Shahabuddin Ahmed took over as Acting President. In the general elections which followed popular parties led by Begum Khalida Zia (BNP) and Sheik Hasina wazed (Awami League) won by big margins.

Government: *Prime Minister:* Begum Khalida Zia.

National Flag: Bottle green with a red disc in the centre.

National anthem: Amar Sonar-Bangla, ami toma bhalobashi (My golden Bengal, I love you), Words by Rabindranath Tagore.

Membership: Bangladesh is a member

of the Commonwealth, the Asian Development Bank, the Organisation for South Asian Regional Co-operation, the UN and all its related agencies, the Colombo Plan and the Islamic Conference.

The country is divided into 4 divisions with 64 districts:

	Area (sq km)	Population 1981
Rajshahi division	**34,238**	**21,132,000**
Dinajpur (3 dist.)	6,566	3,196,000
Rangpur (5 dist.)	9,593	6,510,000
Bogra (2 dist.)	3,888	2,728,000
Rajshahi (4 dist.)	9,456	5,270,000
Pabna (2 dist.)	4,732	3,424,000
Dhaka division	**30,772**	**26,242,000**
Tangail (1 dist.)	3,403	2,444,000
Mymensingh (3 dist.)	9,668	6,568,000
Jamalpur (2 dist.)	3,349	2,452,000
Dhaka (6 dist.)	7,470	10,014,000
Faridpur (5 dist.)	6,882	4,764,000
Khulna division	**33,575**	**17,151,000**
Kushtia (3 dist.)	3,440	2,292,000
Jessore (4 dist.)	6,573	4,020,000
Khulna (3 dist.)	12,168	4,329,000
Barisal (4 dist.)	7,299	4,667,000
Patuakhali (2 dist.)	4,095	1,843,000
Chittagong division	**45,414**	**22,595,000**
Sylhet (4 dist.)	12,718	5,656,000
Comilla (3 dist.)	6,599	6,881,000
Noakhali (3 dist.)	5,460	3,816,000
Chittagong (2 dist.)	7,457	5,491,000
Chittagong Hill Tracts (2)	8,679	580,000
Bandarban (1 dist.)	4,501	171,000

Economy: The third 5-year development plan, 1985-90, envisages an annual growth rate of 5.4%, and an industrial growth rate of 10.1% annually; of industrial development funds, 55% is for the private sector. Agriculture receives 30% of total plan expenditure, and the plan aims at self-sufficiency in food by 1990.

Currency: A new currency, the Taka, was floated in 1976 (Tk. 54.50=£1 and Tk. 31.67=US$1 in March 1989).

Banking: The former private banking system, except for foreign banks, has been nationalised.

Weights and Measures: The metric system was introduced from July 1982, but imperial measures are still in use. Weight is in the seer (1 seer=2 lb.), the maund. (1 maund=40 seers) and the ton.

Energy and Resources: Electric power is generated and distributed by the Bangladesh Power Development Board and the Rural Electrification Board.

Oil: Supplies have been located in the Bay of Bengal. Drilling is in progress.

Gas: Natural gas from Titas and other sites is piped to Dhaka; reserves are considered sufficient for 200 years.

Water: India and Bangladesh are working towards agreement on sharing the water of the river Gangės. The flow will be monitored daily at the Farakka barrage and two other points.

Minerals: Minerals include salt, limestone, white clay, glass sand.

Agriculture: Agriculture contributed 45.7% of GDP in 1986-87 and employs about 80% of the economically active population. The land area is 35.7 m. acres of which 7.2 m. is not available for cultivation.

Livestock in 1987 (1,000): Poultry: 91,000; cattle:23,500; goats: 10,800; sheep: 1,130; buffalo: 1,900; Livestock products in 1986 (tonnes); Beef and veal: 130,000; cow and buffalo milk: 977,000; goats' milk: 528,000; eggs: 83,800.

Bangladesh produces about 70% of the world production of raw jute which is the principal foreign exchange earner. Production 1987, 1.2 m. tonnes.

Forestry: The total area under forests (1986) is 5.2 m. acres. The output of round wood timber in 1980 (1,000 cu. metres): Sawlogs, veneer logs and sleepers, 555; Pulpwood, 63; fuel wood: 9,754.

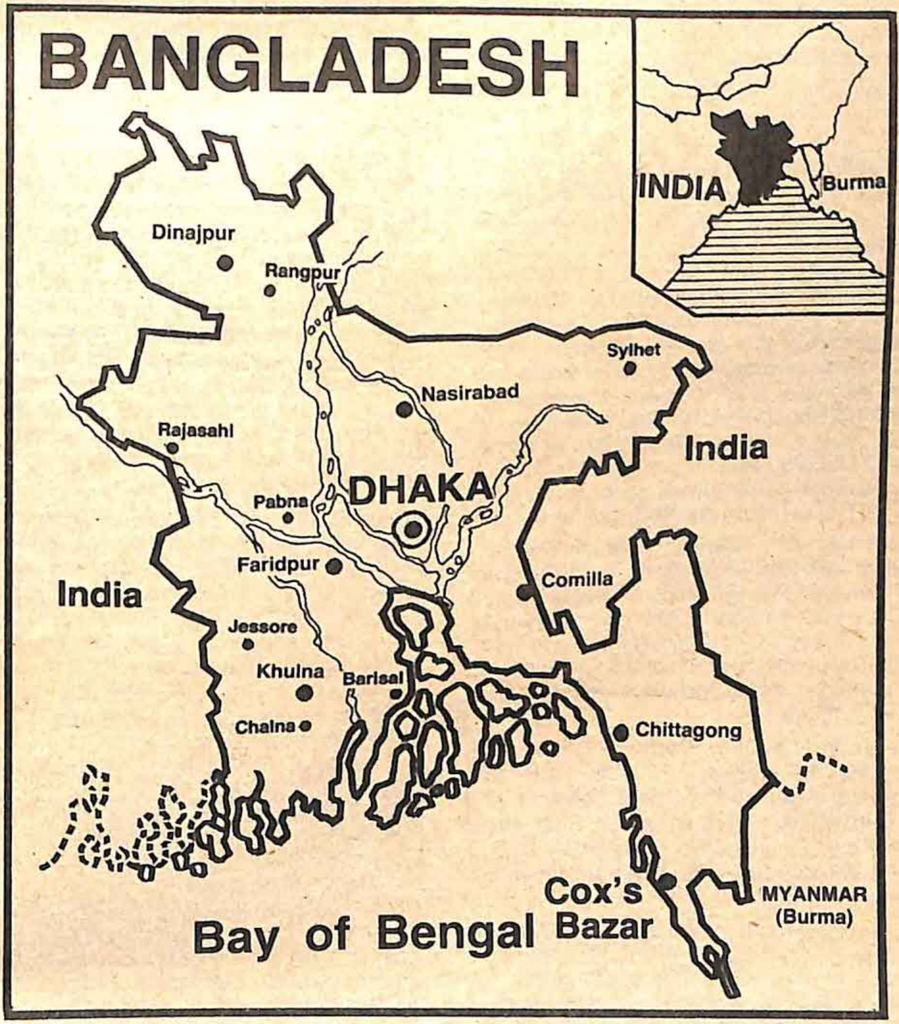
Fisheries: Being bounded on the south by the Bay of Bengal and having numerous rivers and streams, the state is pre-eminently a fish-producing area and possesses great possibilities for the manufacture of various oils and fish products.

Industry and Trade: Out of the existing industries, the textile-mills, sugar factories, match factories, glass works, hosiery factories, a paper-mill, jute-mills, aluminium works and a cement factory, with a capacity of 2 m. tons per annum, are the most prominent.

In May1988, 70 jute mills had 23,000 working looms; they employed 179,000 workers; average monthly production 43,000 tons, valued at Tk.809.5 m.

Refinery distillation capacity, 1.68 m. tonnes. There is a steel-mill at Chittagong with a capacity of 250,000 ingot-tons per annum. There is also a newsprint factory, 4 fertilizer factories, a shipyard, a dockyard and a liquefied natural gas plant. Large-scale industry employs about 7% of the active population.

Labour: In 1983-84, the total employed were 27,972,000; agriculture, forestry and fisheries, 16,389,000; trade, hotels and restaurants, 3,271,000; personal service, 3,250,000; manufacturing, 2,108,000.



Commerce: The main export commodities are jute goods, hide, skins, leather and tea. In 1986-87 exports were valued at Tk.33,682.13 m., of which Tk.6,251.67 m. was from food and live animals (mainly fish, but Tk.903.2 m. from tea); inedible crude materials except fuels. Tk.2,899.8 m., of which Tk.2,754.2 m. from jute; manufactured goods, Tk.12,772.7 m. (mainly jute goods). Principal imports (Tk.68,496.09 m.) are machinery and transport equipment (Tk.14,170.87 m.); manufactured goods (Tk.16,313 m.); minerals, fuels and lubricants (Tk.10,132.3 m.)

Education: At the 1981 census 19.7% of the population was literate (male 25.8%, female 13.2%). The compulsory primary education scheme has been replaced by model primary education. The Government has dissolved the District School Boards and taken over school administration.

In 1984-85 there were 42,200 primary schools (8.5 m. pupils), 9,360 secondary schools (2.5 m.) and (1983-84) 657 intermediate and degree colleges. Of these, there were 123 government colleges, of which 113 gave degrees and 10 were intermediate; Degree colleges had 126,060 students and 4,764 faculty; intermediate, 2,936 students and 194 faculty. There were 534 non-government colleges (256 degree-giving). They had 287,781 students and 9,033 teachers.

There were 6 universities: In 1982-83 Dhaka had 12,394 students (and 893 faculty); Rajshahi 10,198 (463); Chittagong 5,420 (427); Jahangimagar 1,284 (164); Engineering University 3,015 (300); Agricultural 3,771 (379). There are 10 teacher-training colleges, 49 primary training institutes and 57 vocational institutes.

Health: In 1984 there were 452 government hospitals, 1 mental and 12 tuberculosis and chest hospitals, 11 medical colleges and nursing training centres which train about 1,200 nurses annually. There were 21,370 beds. Voluntary agencies ran 164 hospitals with 4,771 beds.

Communications: *Roads:* The State is backward in the matter of road communications but there are some 4,320 km (2,700 miles) of paved and 2,400 km (1,500 miles) of unpaved road. In 1987 Bangladesh Road Transport Corporation ran 434 passenger vehicles and 327 trucks.

Railways: In 1986-87 there were 2,791 km of railways, comprising 969 km of 1,676 mm gauge and 1,822 km of metre gauge. In 1986-87 the railways carried about 2 m. tons of freight and 71 m. passengers. Passenger earnings, Tk.754 m; goods, Tk.591 m.; total earnings, Tk.1,573 m.

Aviation: Bangladesh Biman (Bangladesh Airways) has domestic flights from Dhaka and international services to many destinations abroad. In 1987 Zia International Airport handled 1.18m. passengers.

Shipping: Navigable channels provide 5,000 miles of cheap water routes. There are 3 principal waterways, the Padma, Brahmaputra and Meghna. These are freely used by inland steam vessels which serve areas where railways cannot be economically constructed. The Bangladesh Shipping Corporation owns 24 ships including a 93,000 ton oil tanker (Banglar Noor) and has the capacity to carry 20% of imports and 12% of exports.

Post and Telecommunication: There were 122,190 telephones in 1982. Dhaka and Islamabad were linked by telephone in Oct. 1976 and a second telephone circuit was agreed on 11 April1977. International communications are by satellite, Chittagong being linked to the Indian Ocean Intelsat IV satellite.

Press, Radio and TV: *Newspapers:* In Nov. 1985 there were 54 daily newspapers with a circulation of 554,000. Most papers are published in Dhaka. The Government has set up a paper (Dainik Barta-at Rajashahi) to stimulate a regional press. Most papers are privately owned. There is a Press Institute.

In 1986 there were 576,000 licensed radio receivers and an estimated 369,000 television receivers in use.

National Broadcasting Authority: NBA House, Shahbag Ave, Dhaka; tel. (2) 503342; telex 642228; f. 1984 by merger of Radio Bangladesh and Bangladesh Television; Chairman Saiful Bari.

Radio Bangladesh: f. 1971; govt. controlled; regional stations at Chittagong, Dhaka, Khulna, Rajshahi, Rangpur and Sylhet broadcast a total of 87 hours 35 minutes daily; external service broadcasts 10 programmes daily in Arabic, Bengali, English, Hindi, Nepalese and Urdu; Chairman and Dir. Gen. Enamul Huq.

Bangladesh Television (BTV): POB 456, Rampura, Dhaka; tel. (2) 400131; telex 65624; f. 1971; govt-controlled; colour transmissions from 1981; daily broadcasts on one channel from Dhaka station of 7 hours; transmissions also from stations at Chittagong, Khulna, Mymensingh, Natore, Noakhali, Rangpur, Satkhira; Sylhet, Cox's Bazar and Rangamati were opened between 1975 and 1983; Chairman Saiful Bari; Gen. Manager Mostafa Kamal Syed.

Defence: *Army:* There are 5 infantry divisional headquarters, with 13 infantry brigades and 2 armoured and 6 artillery regiments and 6 engineer battalions. Strength (1989) 90,000 with an additional 55,000 paramilitary volunteers, including an armed police reserve and the Bangladesh Rifles. Equipment includes 30 Soviet T-54 and 20 Chinese Type-59 tanks.

Navy: Naval bases are at Chittagong (handed over by India on 14 Feb 1972), Kaptai, Khulna and Dhaka.

The fleet comprises 3 former British frigates (Ali Hyder, ex-HMS Jaguar and Abu Bakr, ex-HMS Lynx, each 2,520 tons full load, transferred in July 1978 and March 1982, respectively and Umar Farooq ex-HMS Llandaff, 2,408 tons full load, transferred in Dec. 1976); 8 new Chinese-built 390-ton fast attack craft, 4 Chinese-built fast missile craft, 4 Chinese-built fast torpedo boats, 2 ex-Yugoslav 200-ton patrol vessels, 8 ex-Chinese 155-ton fast gunboats, 2 ex-Indian 150-ton patrol craft, 1 British-built 140-ton patrol craft, 5 indigenously built 70-ton river gunboats, 1 oiler, 1 repair vessel, 12 auxiliaries and 1 training ship of 710 tons.

The manpower of the Navy in 1989 was 7,500 comprising 600 officers and 6,900 ratings.

Air Force: Deliveries, from the Soviet Union and China successively, have built up a current strength of about 20 J-6 (MiG-19) fighter-bombers: 1 An-24 and 3 An-26 turboprop transports; about 20 Mi-8, Bell 212, Bell 206L and Alouette III helicopters; 10 Chinese CJ-6 piston-engined primary trainers. FT-2 (MiG-15 VTJ) jet advanced trainers, 6 Magister armed jet trainers and some light aircraft. Personnel strength (1989) 4,000.

Tourism: Tourist attractions include the cities of Dhaka and Chittagong, Cox's Bazar - which has the world's longest beach (120 km) - on the Bay of Bengal, and Teknaf, at the southernmost point of Bangladesh. Tourist arrivals totalled 129,070 in 1986. The majority of visitors were from India, Japan, the United Kingdom and the USA. Earnings from tourism increased from 230 m. taka in 1981 to 900 m. taka in 1985.

In 1987 there were 106,765 visitors to Bangladesh of whom 47,390 were from India. Foreign exchange earnings Tk.192.4m.

BHUTAN

Cap: Thimphu; **Area:** 46500 sq km; **Pop:** 1.4 m., **Language:** Dzongkha; **Literacy:** 12% **Rel:** Buddhism; **Currency:** Ngultrum, Fixed at par with the Indian Rupee which is also legal tender, US$1=16.50 Ngultrum; **GNP** per capita: $160.

Physiography: The Kingdom of Bhutan lies in the eastern Himalayas, bordered north by China and on all other sides by India. Extreme length from east to west 300 km (190 miles). Area about 46,500 sq km. (18,000 sq. miles); of the population estimated at approximatly 1,400,000 (1988). Hindus, of Nepalese origin, form 25% – 30%. Life expectancy (1985) was 48 years. The capital is Thimphu (Population 15,000 in 1987).

The climate is largely controlled by altitude. The mountainous north is cold, with perpetual snow on the summits, but the centre has a more moderate climate, though winters are cold, with rainfall under 1,000 mm (40 inches). In the south the climate is humid sub-tropical and rainfall approaches 5,000 mm (200 inches).

The official language is Dzongkha, spoken mainly in western Bhutan. Written Dzongkha is based on the Tibetan script. The state religion is Mahayana Buddhism, mainly the Drukpa school of the Kogyupa sect.

History: The first hereditary King of Bhutan was installed on 17 December 1907. An Anglo-Bhutanese Treaty, signed in 1910, placed Bhutan's foreign relations under the supervision of the Government of British India. After India became independent, that treaty was replaced in August 1949 by the Indo-Bhutan Treaty of Friendship, whereby Bhutan agrees to seek the advice of the Government of India with regard to its foreign relations, but remains free to decide whether or not to accept such advice.

King Jigme Dorji Wangchuk, installed in 1952, established the National Assembly (Tshogdu) in 1953 and a Royal Advisory Council in 1965. He formed the country's fist Cabinet in May 1968. He died in July 1972 and was succeeded by the Western-educated 16-year-old Crown Prince, Jigme Singye Wangchuk. The new King stated his wish to maintain the Indo-Bhutan Treaty and to strengthen friendship with India.

When Chinese authority was established in Tibet in 1959, Bhutan granted asylum to about 4,000 Tibetan refugees.By July 1980, most of the Tibetans had chosen Bhutanese citizenship, and the remainder were to be accepted by India.

Bhutan joined the UN in 1971 and the Non-Aligned Movement in 1973. By 1987 Bhutan established diplomatic relations with 13 countries, and maintained diplomatic missions at the UN in New York, in New Delhi, Dhaka and Kathmandu.

In 1983 Bhutan became a founder-member of the South Asian Association for Regional Co-operation (SAARC). In May 1985 Bhutan hosted the first meeting of ministers of foreign affairs from SAARC member countries, which agreed to give their group the formal title of SAARC.

Government: Bhutan is a monarchy, without a written constitution.

In 1907 the Tongsa Penlop (the governor of the province of Tongsa in central Bhutan), Sir Ugyen Wangchuk, GCIE, KCSI, was elected the first hereditary Maharaja of Bhutan. The Bhutanese title is Druk Gyalpo and his successor is now addressed as King of Bhutan. From Oct. 1969 the absolute monarchy was changed to a form of democratic monarchy. The National Assembly (Tshogdu) was reinstituted in 1953. It has 151 members and meets twice a year. Two-thirds are representatives of the people and are elected for a 3-year term. All Bhutanese over 25 years may be candidates. Ten monastic representatives are elected by the central and regional ecclesiastical bodies, while the remaining members are nominated by the King, and include members of the Council of Ministers (the Cabinet) and the Royal Advisory Council.

The official languages are Dzongkha, Lhotsam (Nepali) and English.

National Flag: Diagonally yellow over orange over all, in the centre a white dragon.

Head of State: HM Druk Gyalpo ('Dragon King') Jigme Singye Wangchuk (succeeded to the throne in July 1972).

The Royal Advisory Council (Lodol Tsokde), established in 1965, comprises 10 members.

Council of Ministers (Lhengye Shungtsog):

Chairman: HM Druk Gyalpo Jigme Singye Wangchuk.

Local Government: There are 18 Districts, each under a district officer (Dzongda):

Population of Districts
(mid-1985 estimates)

Bumthang	23,842
Chirang	108,807
Dagana	28,352
Gasa	16,907
Gaylegphug	111,283
Haa	16,715
Lhuntshi	39,635
Mongar	73,239
Paro	46,615
Pema Gatshel	37,141
Punakha	16,700
Samchi	172,109

Samdrup Jongkhar	73,044
Shemgang	44,516
Tashigang	177,718
Thimphu	58,660
Tongsa	26,017
Wangdiphodrang	47,152
Total rural population	1,119,452
Total urban population	167,823
Total	1,286,275

Justice: The High Court consists of 8 judges (2 elected by the National Assembly for 5-year terms) appointed by the King. There is a Magistrate's Court in each district, under a Thrimpon, from which appeal is to the High Court at Thimphu.

Religion: In 1988 there were, 1,160 monks in the Central Monastic Body (Thimphu and Punakha) and 2,120 in the District Monk Bodies. The monks are headed by an elected Je Khempo (Head Abbot). The majority of the people are Mahayana Buddhists of the Drukpa subsect of the Kagyud School which was first introduced from Tibet during the 12th century. Hindus of Nepalese origin represent approximately 25% of population.

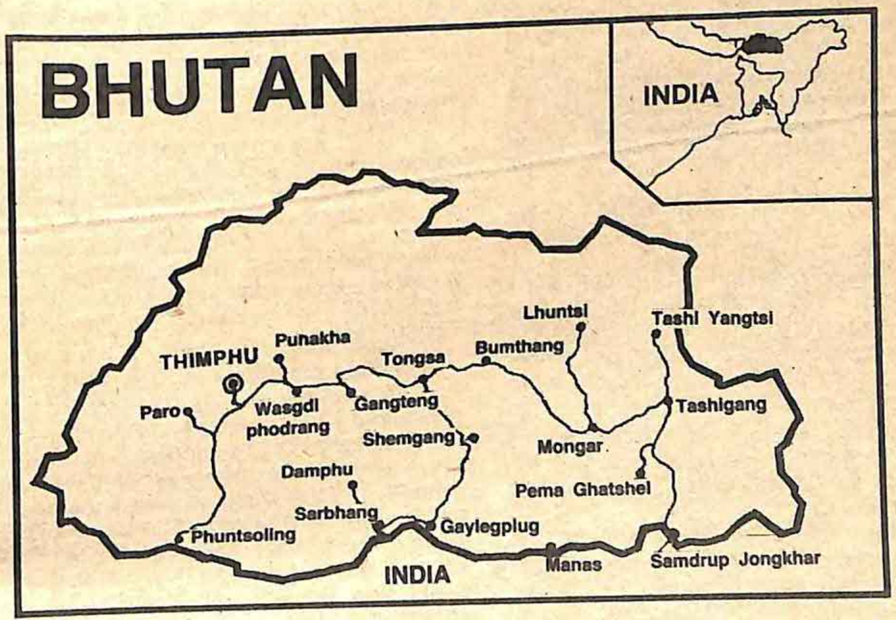
Economy: Bhutan, by world standards is one of the poorest countries. In 1985, according to estimates by the World Bank, the kingdom's gross national product (GNP), measured at average 1983-85 prices, was US $190 m., equivalent to about $160 per head. It was, however, estimated that GNP per head increased, in real terms, by 2.7% in 1985.

Planning: The 6th 5-year plan (1987-92), allows for expenditure of Nu 8,811m.

Budget: The budget for 1988-89 envisaged expenditure of Nu 2,157m, and internal revenue of Nu 660m.

Currency: Paper currency has been introduced, known as the Ngultrum. Cupronickel and bronze currency is known as Cheltrum (100 Cheltrum=1 Ngultrum). Indian currency is also legal tender. In March 1989, £1=Nu26.60; US$1=Nu15.46.

Banking: The Bank of Bhutan was established in 1968. The headquarters are at Phuntsholing with 22 branches throughout the country.



Bhutan's First Ph.D

Chenkyo Tshering Dorji created history of sorts in 1990 by receiving the first ever Ph.D in the Druk-Yul – the Land of Thunder Dragon otherwise known as Bhutan. He achieved this unique honour from the University of Magadh in Bodh Gaya, Bihar for his thesis, 'History of Bhutan based on Budhism.'

Dorji, 41, who studied Budhist literature for eight years was faced with the acute shotage of materials on Budhist countries and had to collect "the data from the original text in Choekey (language), secondary text in English from the Traveller's account of Foreigners, Dzongs and Monasteries and eventually oral versions of the learned people."

Dorji had his early education in St. Paul's School, Darjeeling and St. Xavier's College, Calcutta. He earned his Master's in Dzongkha language from Dzongkha Development Commission. At present he is serving the Government of Bhutan as Joint Director/Registrar, Royal Institute of Management, Thimphu.

Energy, Resources: Electricity production (1986) 1,950m. kwh. 23 towns and 93 villages had electricity.

Minerals: Large deposits of limestone, marble, dolomite, graphite, lead, copper, slate, coal, talc, gypsum, beryl, mica, pyrites and tufa have been found.

Agriculture: The area under cultivation in 1984 was some 126,000 hectares. The chief products (1986 production in 1,000 tonnes) are rice (63), millet (8), wheat (11), barley (5), maize (88), cardamom, potatoes (28), oranges (27), apples, handloom cloth, timber and yaks. Extensive and valuable forests abound.

Livestock (1987): Cattle, 395,000; yaks (1985), 31,271; pigs 62,000; sheep and goats 55,000; poultry (1985) 179,521.

Industry and Trade: Industry: In 1987 there were about 400 small-scale, cottage and industrial units and also a cement plant, a fruit processing factory, a tea-chest ply veneer factory, a resin and turpentine factory, a salt iodization plant and 3 distilleries.

Commerce: Trade with India dominates but timber, cardamom and liquor are also exported to the Middle East, Singapore and Western Europe.

Education: Education is not compulsory. Primary education begins at six years of age and lasts for six years. Secondary education, beginning at the age of 12, lasts for a further five years, comprising a first cycle of three years, and a second cycle of two years. Free education is available, but there are insufficient facilities to accommodate all school age children.

All schools are co-educational and follow a British syllabus. English is the language of instruction. Bhutan has no mission or private schools, and all schools are subsidized by the Government. Many Indian teachers are employed.

In 1987 there were more than 200 educational institutions under the supervision of the Department of Education, including 148 primary schools, 21 junior high schools, nine high schools, one junior college, one degree college, six technical schools, 22 schools for Buddhist studies and monastic schools, two teacher-training schools and four schools for Tibetan refugees.

In 1988 there were 42,446 pupils and 1,513 teachers in primary schools, 16,350 pupils and 695 teachers in junior high and high schools and 1,761 pupils and 150 teachers in technical, vocational and tertiary level schools. Many students receive higher technical training in India, as well as under the UN Development Programme, the Colombo Plan etc. in Australia, the Federal Republic of Germany, New Zealand, Japan, Singapore, the USA and the UK.

The 1987/88 budget allocated Nu 183.8m. (9.1% of total projected expenditure) to education. In 1987 the rate of adult illiteracy in Bhutan was about 80%.

Health: There were (1986) 28 hospitals, 46 dispensaries, 67 basic health units, 4 indigenous dispensaries, 5 leprosy hospitals, 1 mobile hospital, 1 health school and 15 malaria eradication centres. In 1988 beds totalled 915; there were 134 doctors and 541 paramedics.

Malaria and tuberculosis are still widespread. The budget for the financial year 1987-88 allocated Nu 77.8m (3.8% of total projected expenditure) to health. Life expectancy: 45.6 years (1985 estimate).

Communications: Roads: In 1988 there were about 2,000 km of roads. In 1986, there were 3,630 vehicles of which 716 were private cars and 1,697 buses, jeeps and trucks.

Aviation: (1987) There are 3 to 6 flights weekly by Druk-Air between Paro and Calcutta and a weekly return service from Paro to Dhaka. There is a domestic airport at Yangphulla which serves the east of the country. There are numerous helipads too.

Post and Telecommunication: A modern postal system was introduced in 1962. There are 56 general post offices and 30 branch post offices. In 1986 there were 943 km of telephone lines, 13 automatic exchanges and 1,945 telephones.

An international microwave link connects Thimphu to the Calcutta and Delhi satellite connexions. Thimphu and Phuntsholing are connected by telex to Delhi.

In 1986 there were 36 wireless stations for internal administrative communications and 13 hydro-met stations.

Press and Radio: Newspapers: The only weekly newspaper. Kuensel, began publication in Aug. 1986 to replace the government weekly bulletin. It is published in 3 languages (English, Dzongkha and Nepali). Total circulation (1988) about 12,500.

Kuenphen Digest: Kuenphen Enterprises Pvt. Ltd., Phuntsholing; monthly, English.

Kuenphen Tribune: Kuenphen Enterprises Pvt. Ltd., fortnightly, English.

Bhutan Broadcasting Service, Thimphu, broadcasts a daily programme in English, Sharchopkha, Dzongkha and Nepali. There are an estimated 15,000 radio receivers. There are no television transmission stations in Bhutan, but broadcasts from Bangladesh can be received in Phuntsholing. There are about 200 registered television receivers in the country.

Defence: The Royal Bhutanese Army, which is under the direct command of the King, comprise 4000 men. Army training facilities are provided by an Indian military training team. Although India is not directly responsible for the country's defence, the Indian Government has indicated that any act of aggression against Bhutan would be regarded as an act of aggression against India.

Tourism: Tourism is the largest source of foreign exchange to Bhutan (1987 US$2.04m. net). The Kingdom was opened to tourism in the autumn of 1974. The tourist seasons are from March to June and September to December. From 1974 to 1982 all tourists arrived by road via India. In 1987 the total number of foreign visitors mainly from Europe, Japan and USA was 2,486.

In 1986 Druk Air began daily flights between Calcutta and Paro. By 1987 there was also a twice-weekly service between Dhaka and Paro. Tourists travel in organized package or trekking tours, accompanied by guides. Hotels have been constructed by the Department of Tourism at Phuntsholing, Paro and Thimphu, with lodges at Tongsa, Bumthang and Manas. There are also many small privately-run hotels and guest-houses.

The first mountaineering expedition was launched in 1983, to Mt Jichudrake. In early 1987 Mt Gangar Phunsum, one of the world's highest unclimbed mountains, was closed to climbers, to respect the wishes of the local people. Central Bhutan was opened for trekkers and coach tours in 1982. but eastern Bhutan remains closed to foreigners. The Government intends to exercise close control over the development of tourism.

Bhutan Tourism Corporation (BTC): POB 159, Thimphu; tel. 2647; telex 217; state organization; operates four hotels for tourists.

Indians need no visas. Indian Rupee is legal tender.

INDIA

(See Part Three)

MALDIVES

Cap: Male; Area: 298 sq km; **Pop:** 0.2 m; **Lang:** Divehi; **Literacy:** 82%; **Religion:** Islam; **Currency:** Rufiyaa, US $ 1=8.75 rufiyaa; **GNP per capita:** $ 470.

Physiography: The Republic of Maldives (Divehi Jumburiya) lying about 675 km (420 miles) south-west of Sri Lanka, consists of more than 1,200 small coral islands (of which 202 are inhabited), grouped in 19 atolls, in the Indian Ocean. The climate is hot and humid. The average annual temperature is 27°C (80°F), with little daily or seasonal variation, while annual rainfall is generally between 2,540 mm and 3,800 mm (100 to 150 in).

The national language is Divehi (Maldivian), related to Sinhala. Islam is the state religion, and most Maldivians are Sunni Muslims.

Population (census 1985) 181,453 of which 45% is under 15 years. Estimate (1988) 200,000.

Principal Town: Male (capital), population 46,334 (1985).

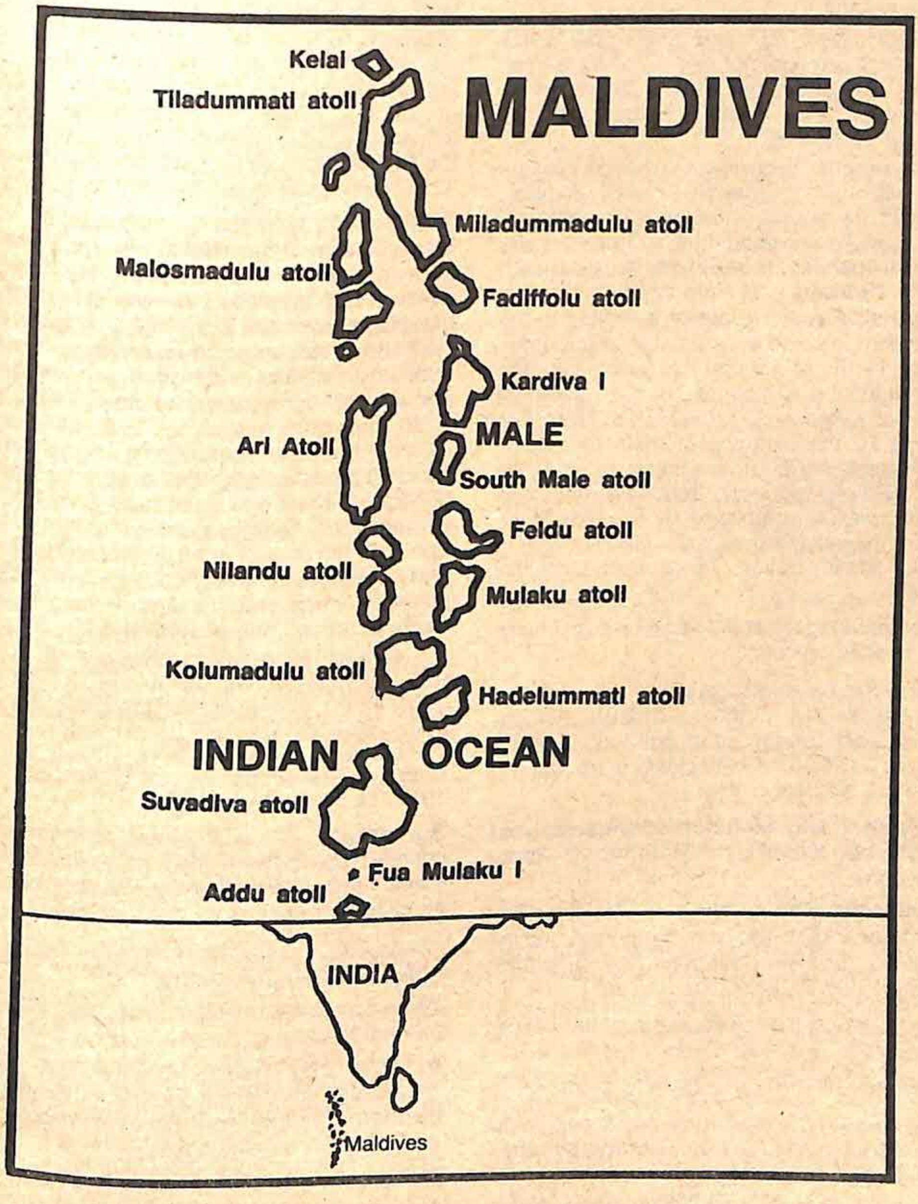
History: Maldives, called the Maldive Islands until April 1969, formerly had an elected Sultan as head of state. The islands were placed under British protection, with internal self-government, in 1887. They became a republic in January 1953 but the sultanate was restored in February 1954. Maldives became fully independent, outside the Commonwealth, on 26 July 1965. Following a referendum, the country became a republic again in November 1968, with Ibrahim Nasir, Prime Minister since 1954, as President.

In 1956 the Maldivian and British Governments agreed to the establishment of a Royal Air Force staging post on Gan, an island in the southernmost atoll, Addu. In 1975 the British Government's decision to close the base and to evacuate British forces created a large commercial and military gap. In October 1977 President Nasir rejected an offer of an annual payment of US $ 1 m. from the USSR to lease the former base on Gan, announcing that he would not lease the island for military purposes, nor lease it to a superpower.

In 1981 the President announced plans to establish an international business complex on Gan. By 1982 two garment factories were operational, and a third was under construction. Gan airport was declared international airport in 1988.

In March 1975 President Nasir dismissed the Prime Minister, Ahmed Zaki, and the post of Prime Minister was abolished. Unexpectedly, President Nasir announced that he would not stand for re-election at the end of his second term in 1978. To succeed him, the legislature chose Maumoon Abdul Gayoom, Minister of Transport under Nasir, who was approved by referendum in July 1978. He took office in November. President Gayoom announced that his main priority would be the development of the poor rural regions, while in foreign affairs the existing policy of non-alignment would continue.

Ex-President Nasir left the country after his resignation, but the authorities subsequently sought his return to Maldives, where he was required to answer charges of misappropriating government funds. In 1980 President Gayoom confirmed an attempted coup against the Government and implicated Nasir in the alleged plot. Nasir was to stand trail, in his absence, on these and other charges. In April 1981 Ahmed Naseem, former Deputy Fisheries Minister and brother-in-law of Nasir, was


MALDIVES
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MALE
Ari Atoll
South Male atoll
Feldu atoll
Nilandu atoll
Mulaku atoll
Kolumadulu atoll
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INDIAN OCEAN
Suvadiva atoll
Fua Mulaku I
Addu atoll
INDIA
Maldives

sentenced to life imprisonment for plotting to overthrow the President. Nasir himself denied any involvement in the coup, and attempts to extradite him from Singapore were unsuccessful.

In September 1983 and September 1988 President Gayoom got re-elected for 5-year terms. An attempted coup took place in November,1988. It was scotched with the assistance of India.

Government: Legislative power is held by the unicameral Citizens' Council (Majilis), with 48 members, including 40 elected for five years by universal adult suffrage (two by the National Capital Island and two from each of the 19 atolls) and eight appointed by the President. Executive power is vested in the President, elected by popular vote (on nomination by the Majilis) for five years. He governs with the assistance of an appointed Cabinet, responsible to the Majilis. The country has 20 administrative districts; the capital is under direct central administration while the 19 atolls are each under an atoll chief (verin) who is appointed by the President, under the general guidance of the Minister of Atolls administration. There are no political parties.

National Flag: Red with a green panel bearing a white crescent.

Local Government: Maldives is divided into the capital and 19 other administrative districts, each under an appointed governor (verin) assisted by local chiefs (katheebum), who are also appointed.

President and Minister of Defence and National Security: Maumoom Abdul Gayoom.

International Relations: The Maldives is a member of U.N., the Commonwealth and the SAARC. In 1987 Maldives had diplomatic relation with 74 countries.

Justice: Justice is based on the Islamic Shari'ah.

Religion: The State religion is Islam.

Economy: Most of the country's population live on tiny coral islands in scattered atolls. These islanders are generally outside a money economy, subsisting by fishing and collecting coconuts. A large proportion of the coconut crop is regularly destroyed by rats, and a programme to eradicate the rats began in 1981. Male has traditionally maintained a higher standard of living than the national average by levying an indirect tax on fish and coconuts. The soil is generally sandy, and arable land is minimal. Small quantities of coconuts, millet, sorghum, maize and yams are grown, but virtually all the principal staple foods have to be imported. Less than 8% of the labour force are farmers, producing only 12% of the gross domestic product (GDP).

During the 1970s the growth rate of the Maldivian economy failed to keep pace with the increase in the country's population, which averaged 3% annually. However, despite the handicaps imposed by geography, sparse agricultural resources and a narrowly-based economy, Maldives achieved an average annual economic growth of 8.9% between 1976 and 1986, largely as a result of increased revenues from fishing and tourism. By 1985 the country's gross national product (GNP) per head had risen to $US $290 (at average 1983-85 prices), from $220 (at average 1978-80 prices) in 1979. Between 1965 and 1985, it was estimated, Maldives' GNP per head increased, in real terms, at an average annual rate of 1.9%.

Currency: The rufiyaa is divided into 100 laarm, there are notes of 1, 2, 5, 10, 20, 50 and 100 rufiyaa. In March 1989. £1=15.05 rufiyaa. US $1=8.75 rufiyaa.

Energy, Resources: Electricity: Production, 1987, 14.8 m.kwh.

Agriculture: The islands are covered with coconut palms and yield millet, cassava, yams, melons and other tropical fruit as well as coconut produce.

Production in 1987 included (in 1,000 tonnes): Coconuts, 13; copra, 2.

Fisheries: Catch, mainly tuna (1987) 56,900 tonnes.

Industry and Trade: Industry: The main Industries are fishing, tourism, shipping, reedware, lacquer-work, coconut processing and garment manufacturing.

Commerce: In 1985 imports amounted to US $47.9 m. and exports to US $23 m. of which 29% was to Thailand, 24% to the USA and 20% to Sri Lanka. Bonito ('Maldive fish') is the main export commodity.

Education: Education is not compulsory. There are three types of formal education: traditional Koranic schools (Makthab), Dhivehi-language primary schools (Madhrasa) and English-language primary and secondary schools. Schools of the third category are the only ones equipped to teach a standard curriculum. In 1984 a national curriculum was introduced in all schools.

Primary education begins at six years of age and lasts for five years. Secondary education, beginning at the age of 11, lasts for up to seven years, comprising a first cycle of five years and a second of two years. In 1983 it was estimated that only about 65% of the school-age population attended school. School enrolment grew by 9.5%, however, between 1984 and 1986.

In 1975 a full-time vocational training centre was opened in Male, in 1977 a teacher-training institute was established, and in 1979 the Science Education Centre was opened. In 1987 a Basic Education Programme was launched, and an estimated 11,000 adults attended classes during 1983. In 1987 the Government estimated that the islands' rate of literacy was 82%, the highest literacy rate in South Asia. Expenditure on education by the central Government in 1985 was about 22.4 m. rufiyaa, representing 12.0% of total spending.

In 1987 there were 300 primary schools with 53,412 pupils and 1,134 teachers and 6 secondary schools with 1,313 students and 116 teachers.

Health: The country's main hospital, in Male, has 84 beds. There are also three regional hospitals: one in the north and two in the south. In 1981 only eight physicians were working in official medical services. Of the total expenditure by the central Government in 1985, about 10.8 m. rufiyaa (5.8%) was for health, and a further 6.9 m. rufiyaa (3.7%) for social security and welfare.

Communications: Roads: In 1987 there were 401 cars, 1,241 motorbikes, 648 handcarts, 16,681 bicycles and 485 other vehicles.

Aviation: There are direct flights to Europe, Dubai, Abu Dhabi, Bahrain, Kuwait, Karachi, Singapore and neighbouring countries. Trivandrum is the closest Indian airport. Service to Australia is available via Singapore. Domestic service to Gan is also operated. In 1987, 2,975 aircraft, 292,903 passengers and 3,067,206 kg of freight were handled at Male International Airport. There are 2 domestic airports. Air Maldives operates domestic flights only.

Shipping: The Maldives Shipping Line operated (1984) 32 vessels.

Post and Telecommunication: There were (1987) 2,965 telephones.

Press, Radio & T.V.: Newspapers: There are 2 daily newspapers, 1 weekly, 2 fortnightlies and 1 monthly magazine. Dailies: **Asfathis:** Male; Divehi and English.

Haveeru: G. Olympus (North Side), Male 20-04; f. 1979; daily: Divehi and English. circ. 1,500.

Voice of Maldives: Moonlight Higun, Male; radio broadcasting began in 1962; home service in Divehi and English; broadcasts 4,069 hrs annually.

Television Maldives: Buruz Magu, Male; television broadcasting began in 1978. In June 1987 there were 21,198 radio receivers and 3,828 television receivers in use.

Tourism: Tourism introduced in 1972, is expanding and there were 131,399 visitors in 1987. Receipts from tourism amounted to US $42.0 m. in 1986. The islands' attractions include white sandy beaches and multi-coloured coral formations. By 1986 there were 56 resorts, with a total of 5,737 hotel beds. The annual total of foreign visitors increased from 1,799 in 1972/73 to 113,953 in 1986. A Tourist Advisory Board was formed in 1981 to expand the industry.

NEPAL

Capital: Kathmandu; **Area:** 147,181 sq km.; **Population:** 18.8 m.; **Language:** Nepali; **Literacy:** 29%; **Religion:** Hinduism; **Currency:** Nepalese Rupee US $1=24.10 rupees; **GNP per capita:** $170.

Physiography: The Kingdom of Nepal (Nepal Adhirajya) is a land-locked Asian country in the Himalaya mountain range. It is bounded on the north by Tibet, on the east by Sikkim and West Bengal, on the south and west by Bihar and Uttar Pradesh. There are 3 geographical regions: The fertile Tarai plain in the south; a central belt containing the Mahabharat Lekh and Churia Hills and the basins of the Inner Tarai; and the Himalayas in the north.

The climate varies sharply with altitude, from arctic on the higher peaks of the Himalaya mountains (where the air temperature is permanently below freezing point) to humid sub-tropical in the central valley of Kathmandu, which is warm and sunny in summer. Temperature in Kathmandu, which is 1,337 m (4,386 ft.) above sea-level, is generally between 2°C (35°F) and 30°C (86°F), with an annual average of 11°C (52°F). The rainy season is between June and October. Average annual rainfall varies from about 1,000 mm (40 in) in western Nepal to about 2,500 mm (100 in) in the east.

The official language is Nepali, spoken by 58.4% of the population in 1981. Other languages include Maithir (11.1% in 1981) and Bhojpuri (7.6%).

Nearly 90% of the population were Hindus in 1981, with 5.3% Buddhists and 2.7% Muslims.

Population of Principal Cities:

Kathmandu (Capital)	:	239,160
Biratnagar	:	93,544
Pokhara	:	46,542
Birgunj	:	43,642
Nepalgunj	:	34,015
Bhairahawa	:	31,190

Population (estimate 1989) 18.8 million; (census, 1981) 15,022,839 of whom 52.4% were Nepali-speaking and 18.5% Bihari-speaking.

The Capital, Kathmandu is 120 km (75 miles) from Indian frontier.

The aboriginal stock is Mongolian with a considerable admixture of Hindu blood from India. They were originally divided into numerous hill clans and petty principalities, one of which, Gorkha or Gurkha, became predominant in 1559 and has since given its name to men from all parts of Nepal. The 15 feudal chieftainships were integrated into the kingdom on 10 April 1961.

History: From 1846 to 1951, Nepal was in effect ruled by a family of hereditary Rana Prime ministers, who pursued a policy of close co-operation with the British power in India. Agitation by the Nepali Congress Party in the late 1940s for a more democratic government led to a revolution, through which the royal line – represented by King Tribhuvan – returned to power. A general election, on the style of Western democracies, held in June 1959 delivered an overwhelming victory to the Congress party headed by Biswes-wore Prasad Koirala. However, towards the end of 1960, King Mahendra, who had succeeded his father King Tribhuvan, dismissed the country's first parliamentary government and inaugurated personal rule through the medium of the partyless *Panchayat* system.

Mahendra died on 31 January 1972, and was succeeded by his Western-educated son, Birendra, who was officially crowned in February 1975. Some four years later, on 24 May 1979, Birendra announced that Nepal's political system would be put to the vote. Following this announcement, he gave a general amnesty to all political workers within and outside the country; accordingly, more than 160 political prisoners were freed. A national referendum was held on 2 May 1980, resulting in a narrow mandate for the continuation of the Panchayat system with democratic reforms. Three important reforms were introduced.

* The election of the rastriya (national) Panchayat – the unicameral legislature – and of the lowest tiers of government (village or town) on the basis of a universal adult franchise.

* The choosing of the prime minister by elected members of the house.

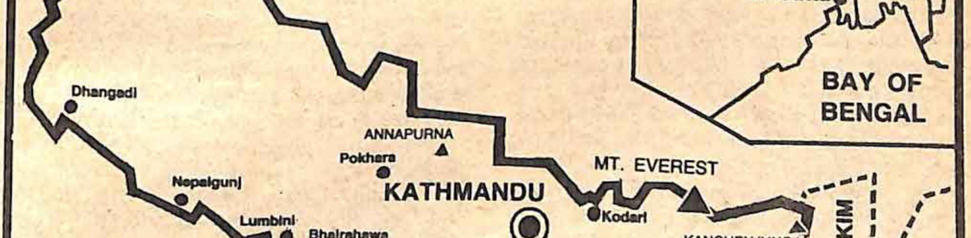
* The government's accountability to the public through the national legislature.

Five years later, the king announced his decision to bring about the decentralisation of administrative power and development responsibilities, down to the village or town panchayat level.

In April 1990, the King dissolved the 46 month-old Council of Ministers headed by Marich Man Singh Shrestha and appointed Lokendra Bahadur Chand as the new prime minister. However the all-party Movement for Democracy started a nation wide agitation which resulted in bloody clashes giving way for the dissolution of the National Panchayat and the formation of a United Front government led by the Nepali Congress Leader Krishna Prasad Bhattarai. In the general elections held in 1991, a government led by M.P. Koirala was formed.

Nepal has traditionally been very dependent on India, but in August 1976 the Trade and Transit Treaty between the two countries expired. In March 1978 this agreement was replaced by two treaties (renewed in 1983 and 1984) allowing Nepal to develop trade with other countries. In June 1987 Nepal and India signed an agreement to establish a joint commission for the promotion of economic co-operation between the two countries. Delay in the renewal of trade and transit treaty with India caused considerable hardship to the people of Nepal in 1989. However this was resolved in early 1990.

China also has contributed a considerable amount to the Nepalese economy. In 1985 it was agreed that Nepal's border with the Xizang (Tibet) Autonomous Region of China should be opened. Ties with Bangladesh are also significant.



Nepal pursues a non-aligned foreign policy, and had diplomatic relations with 99 countries in 1987. Nepal (with six other countries) is a member of the South Asian Association for Regional Co-operation. The Association's permanent secretariat was established in Kathmandu in 1987.

Government: The country is administratively divided into 14 zones (Bagmati, Bheri. Dhaulagiri, Gandaki, Janakpur, Karnali, Kosi, Lumbini, Mahakali, Mechi, Narayani, Rapti, Sagarmatha and Seti) and thence into 75 districts and over 3,500 villages.

National Flag: Two triangular parts of red, with a blue border all round, bearing symbols of the moon and the sun in white.

National Anthem: 'May glory crown our illustrious sovereign' (1952).

Head of State: HM King Birendra Bir Bikram Shah Dev (succeeded to the throne 31 January 1972; crowned 24 February 1975).

Prime Minister: M.P. Koirala.

International Relations: Nepal is a member of UN and the Colombo Plan.

Justice: The Supreme Court Act, established a uniform judicial system, culminating in a supreme court of a Chief Justice and no more than 6 judges. Special courts to deal with minor offences may be established at the discretion of the Government.

Religion: Hinduism is the religion of 90% of the people. Buddhists comprise 5% and Muslims 3%. Christian missions are permitted, but conversion is forbidden.

Economy: With an inhospitable terrain, comprising isolated valleys and very high mountains, Nepal is among the least developed countries in the world. Since the mid-1960s the country's economic growth has barely kept pace with the increase in its population. In 1989, according to estimates, Nepal's gross national product (GNP) per head was US $170, which was among the 12 lowest in the world. Between 1965 and 1985, it was estimated, Nepal's GNP per head increased, in real terms, at an average rate of 0.1% per year.

Much of the country is forested and too steep for cultivation, yet in 1981 about 91% of the labour force were engaged in agriculture, forestry and fishing. This sector contributed almost 59% of Nepal's GDP and provides an estimated 60% of export earnings. Forest cover has been reduced from 60% of the land area to around 30% since the early 1950s, mainly because of the rapid increase in Nepal's population. In 1980 an estimated 4.8 m. ha of land was forested. In 1984 a programme of forest development and rehabilitation was begun, at a total cost of US $24 m., mainly financed by the World Bank.

Livestock (1987): Cattle, 6,374,000, including about 689,000 cows; 2.89 m. buffaloes; sheep, 821,000; goats, 5.07 m.; pigs, 467,000; poultry, 10 m.

Fisheries: Catch (1983) 2,100 tonnes.

Budget: The general budget for the fiscal year 1987-88 envisaged current expenditure of NRs. 4,307 m. Domestic revenue was estimated at NRs. 5,875 m.

Currency: The Nepalese rupee is 171 grains in weight, as compared with the Indian rupee, which weight 180 grains. The rate of exchange is 135 Nepalese rupees for 100 Indian rupees. 100 Nepalese pice = 1 Nepalese rupee. Coins of all denominations are minted. The Rastra Bank also issues notes of 1, 5, 10, 100 and 1,000 rupees. In March 1989, US $1=24.10 rupees, £1=41.47 rupees.

The Central Bank of the country is Nepal Rastra Bank, whose total assets is 11,379 m., and cap. p.u. 10 m. rupees (July 1986).

Commercial Banks: Nepal Bank Ltd: POB 36, Dharma Path, Juddha Rd., Kathmandu and Rastriya Banijya Bank (National Commercial Bank): Bhatbhateni, Tangal, Kathmandu.

Energy, Resources: Nepal has to import some 150,000 metric tons of petroleum products annually (one-third from the Gulf, and the remainder from the USSR). The cost of these imports was equivalent to 44% of the country's export earnings in 1983/84. In 1986 Nepal signed an agreement allowing two foreign oil companies to explore for petroleum in the far south-east of the country.

Nepal's rivers are being exploited for hydroelectric power production, but it was estimated that by 1986 only 0.05% of the country's huge potential was being utilized. Total production in 1986: 395 m. kwh. A 69 MW hydroelectric generator at Marsyangdhi is due to be completed in 1990/91.

Mica is mined east of Kathmandu, and there are also small deposits of lignite, copper, cobalt and iron ore. In the early 1980s the

International Finance Corporation (IFC) and others invested in projects to mine magnesite, zinc and lead.

Industry and Trade: Industry contributes about 10% of Nepal's GDP: 6% from traditional cottage industries and 4% from modern industries – brick and tile manufacture, construction materials, paper, jute, carpet-making, food-grain processing, vegetable oil extraction, sugar refining and a brewery. According to one estimate, more than 1 m. workers are employed in traditional industries such as blanket making, cotton fabrics, edible oils, etc.

Cotton garments became Nepal's chief export item after Indian manufacturers transferred operations to Nepal to avoid import quotas imposed by the USA. However, Nepal, in turn, had import quotas imposed on it by the U.S. in 1986. The value of cotton garment exports rose from NRs 30 m. in 1982-'83 to NRs 700 m. in 1984-'85.

Industries, such as jute and sugar-mills, match, leather, cigarette, and shoe factories, and chemical works have been established, including two industrial estates at Patan and Balaju. Production (1982 in 1,000 tonnes): Jute goods, 15.7; sugar, 21.1; cement, 30; iron goods, 7.4.

Nepal's major trading partner is India, which took 44% of exports and provided 40% of imports in 1986/87 (compared with 67% of exports and 46% of imports in 1981/82), and almost all the Nepal's imports pass through the Indian port of Calcutta.

After a visit to Nepal in 1980 by a trade delegation from the Xizang (Tibet) Autonomous Region in the People's Republic of China, 21 trade routes were opened up along the Sino-Nepalese border (with effect from March 1985).

The principal articles of Nepal's export are food grains, jute, timber, oilseeds, ghee (clarified butter), potatoes, medicinal herbs, skins and cattle. The chief imports are textiles, cigarettes, salt, petrol and kerosene, sugar, machinery, medicines, boots and shoes, paper, cement, iron and steel, tea.

Education: Primary education, beginning at six years of age and lasting for five years, is officially compulsory and is provided free of charge in government schools. Secondary education, beginning at the age of 11, lasts for a further five years, comprising a first cycle of two years and a second of three years. In 1984 the total enrolment at primary and secondary schools was equivalent to 52% of the school-age population (boys 72%; girls 30%).

Primary enrolment in 1984 included an estimated 56% of children in the relevant age-group (boys 76%; girls 35%), while the comparable ratio for secondary enrolment was 18% (boys 27%; girls 9%).

In 1985 there were 11,946 primary schools, with a total of 1,818,668 pupils, while a further 501,063 pupils were enrolled at secondary schools.

There is one university, the Tribhuvan University in Kathmandu, with a second campus at Pokharan.

Health: In 1986 there were about 600 physicians working in Nepal. In 1982 there were 73 hospitals, with a total of 2,586 beds, one for every 5,483 of the population. Of the projected development expenditure by the central government in the financial year 1987/88, NRs 583.3 m. (5.7%) was for health. Under the provisions of the seventh Five-Year Plan (1985-90), 29.8% of development expenditure was allocated to the social services. A 300-bed teaching hospital for 500 students, built with Japanese government assistance, was opened in 1984.

Defence: The Army consists of 1 Royal Guard, 7 infantry brigades, and single artillery, engineer, signals, parachute and transport battalions, and 1 air squadron. Equipment includes 25 Ferrets. Strength of all services (1989) is about 40,000, and there is also a 28,000 strong paramilitary police force.

Air Force: Independent of the army since 1979, the Air Force has 3 Skyvan transport aircraft, 1 Puma helicopter and 3 Chetak helicopters. An H.S. 748 turboprop transport and 1 Super Puma and 1 Puma helicopters are operated by the Royal Flight.

Communications: Roads: With the co-operation of India and USA, 1440 km (900 miles) of motorable roads are being constructed, including the East-West Highway through Southern Nepal. A road from the Tibetan border to Kathmandu was recently completed with Chinese aid. There are about

2,000 km motorable roads. A ropeway for the carriage of goods covers the 22 km from Dhursing above Bhimphedi into the Kathmandu valley. A road connects Kathmandu with Birgung.

Railways: Railways (762 mm gauge) connect Jayanagar on the North Eastern Indian Railway with Janakpur and thence with Bizalpura (54 km).

Aviation: The Royal Nepal Airline Corporation has linked Kathmandu, the capital, with 11 districts of Nepal; and in 1984, 30 airfields were in regular use. The airline carried 424,000 passengers and 2,900 tonnes of freight in 1983-84. The Royal Nepalese Airline Corporation has services between Kathmandu and Calcutta, Patna, New Delhi, Bangkok, Rangoon and Dacca, employing Boeing 727 jet aircraft.

Post and Telecommunications: Kathmandu is connected by telephone with Birganj and Raxaul (North Eastern Indian Railway) on the southern frontier with Bihar; and with the eastern part of the Terai foothills; an extension to the western districts is being completed. Number of telephones (1978) was 9,425, of which 5,431 were in Kathmandu. Under an agreement with India and the USA, a network of 91 wireless stations exists in Nepal , with further stations in Calcutta and New Delhi.

Press, Radio & T.V.: Since November 1982 curbs on registration of newspapers have been lifted, and by April 1987 a total of 58 daily newspapers and 345 weekly periodicals were published in Nepal.

Radio Nepal broadcasts on short and medium wave in Nepali and English; stations at Jawalakhel and Khumaltar.

In March 1986 Nepal's first television station began broadcasting within the Kathmandu valley. Nepálese Television Corporation now broadcasts 23 hours a week.

In 1986 there were an estimated 2.0 m. radio receivers and an estimated 27,000 television (incl. 25,000 colour) receivers in use.

Tourism: Tourism is being developed by the construction of new tourist centres in the Kathmandu valley, and regular air services link Kathmandu with Pokhara Lake. Major tourist attractions include Lumbini, the birthplace of Buddha, and the Himalaya mountain range including Mount Everest, the world's highest peak.

Nepal received 226,236 tourists in 1986, compared with 180,983 in 1985. The number of hotel beds increased from 6,782 in 1982 to 8,760 in 1986.

PAKISTAN

Capital: Islamabad; **Area:** 796,095 sq km; **Population:** 109.2 m.; **Language:** Urdu; **Literacy:** 26%; **Religion:** Islam; **Currency:** Rupees US $1=Rs.19.50; **GNP per Capita:** $365.

Physiography: The Islamic Republic of Pakistan is bounded north-west by Afghanistan, north by the USSR and China, east by India and south by the Arabian Sea. The climate is dry and generally hot, with an average annual temperature of 27°C (80°F), except in the mountains, which have very cold winters. Temperatures in Karachi are generally between 13°C (55°F) and 34°C (93°F), with negligible rainfall.

The national language is Urdu. Punjabi, Sindhi and Pushtu are also widely spoken and English is extensively used. The total area of Pakistan is 796,095 sq km. (307,293 sq miles); population (1981 census), 84.25 m.; males, 44,232,000; females, 40,021,000. Density, 105.8 per sq km. Estimates (1989) of population, 109.2 m. Urban population, 28.3%.

The population of the principal cities is:

Islamabad	201,000
Karachi	5,103,000
Lahore	2,922,000
Faisalabad	1,902,000
Rawalpindi	928,000
Hyderabad	795,000
Multan	730,000
Gujranwala	597,000
Peshawar	555,000
Sailkot	296,000
Sargodha	294,000

Quetta	285,000
Jhang	195,000
Sukkur	191,000
Bahawalpur	178,000
Kasur	155,000
Gujarat	154,000
Okara	154,000

By Jan. 1987 there were 3 m. Afghan refugees in Pakistan, of whom most were in the North-West Frontier Province, and small numbers in Baluchistan and the Punjab.

History: The idea of a separate state for Muslims of the subcontinent was part of the theory that Muslims—by virtue of their religion and cultural distinction—constituted a separate nation. Poet-philosopher Muhammad Iqbal articulated the concept of Pakistan in its basic form in 1931 when he proposed a separate state comprising Muslim majority areas in north-western India. The All-India Muslim League led by Muhammad Ali Jinnah adopted the concept in 1940 and the name "Pakistan" came into use immediately thereafter. The Muslim state that emerged from partition of British India on 14 August 1947 included an eastern wing comprising mainly the eastern half of Bengal province and parts of Assam.

For nine years Pakistan remained a dominion. It was proclaimed an Islamic republic on 23 March 1956. A federal parliamentary system functioned until Field-Marshal Muhammad Ayub Khan seized power in a coup in October 1958. Ayub proclaimed a presidential system in the constitution of 1962 and ruled until March 1969, when he was deposed by Gen. Yahya Khan.

In the first free elections in December 1970, Zulfikar Ali Bhutto's Pakistan People's Party dominated the west, while Sheikh Mujibur Rahman's Awami League swept the board in the east, winning 160 of the 162 seats. This would have been a controlling majority in a national assembly for both wings.

Bhutto refused to sit in opposition and allow Mujib to form a government. Mujib's programme for autonomy for East Pakistan was rejected by Bhutto and Yahya, leading the Bengali leader to proclaim the People's Republic of Bangladesh on 26 March 1971. Civil war followed after Yahya, supported by Bhutto, ordered troops to arrest Mujib and put down the Bengali uprising. The east-west war ended in December 1971. Yahya handed over power to Bhutto, who ruled until July 1977, before being overthrown after an opposition campaign against alleged rigging in general elections. Gen. Zia-ul-Haq took over —initially to hold elections and transfer power to a civilian regime. But elections were twice postponed and Bhutto was tried for the murder of a political opponent and executed.

Gen. Zia was killed in a plane crash on August 17, 1988 and Senate Chairman Ghulam Ishaq Khan took over as Acting President. The country was placed under emergency rule.

In the general election held on November 16, 1988 the Pakistan Peoples' Party (PPP) led by Benazir Bhutto won the largest number of seats (92) followed by the Islamic Democratic Alliance (55). Benazir assumed office as the Prime Minister on December 9. Ghulam Ishaq Khan was elected President on December 12.

President Ishaq Khan dismissed Benazir, dissolved the national assembly and ordered fresh elections on August 8, 1990. Nawaz Sharief of Islami Jamhoori Ittehed took over as Pakistan's 11th Prime Minister on November 5.

Governors-General of Pakistan: Quaid-I-Azam Mohammed Ali Jinnah (14 Aug. 1947–11 Sept. 1948; Khawaja Nazimuddin (14 Sep. 1948–18 Oct. 1951; took over the premiership after the assassination of Liaquat Ali Khan); Ghulam Mohammed (19 Oct. 1951–6 Aug. 1955); Maj.-Gen. Iskander Mirza (assumed office of President on 6 Oct. 1955, elected President on 5 March 1956).

Presidents of Pakistan: Maj.-Gen. Iskander Mirza (23 March 1956–28 Oct. 1958); Field Marshal Mohammad Ayub Khan (28 Oct. 1958–25 March 1969); Maj.-Gen. Agha Muhammad Yahya Khan (31 March 1969–20 Dec. 1971); Zulfiqar Ali Bhutto (20 Dec. 1971–14 Aug. 1973); Fazal Elahi Chaudhry (14 Aug. 1973–16 Sept. 1978); Gen. Mohammad Zia ul-Haq (16 Sept. 1978–17 Aug. 1988); Ghulam Ishaq Khan (acting 17 Aug. 1988, confirmed 12 Dec. 1988).

Government: Under the Constitution of 1973 Parliament is bi-cameral, comprising the National Assembly and the Senate. The strength of the National Assembly is 210 including 10 women. The Senate consists of 63 members, 14 from each province, 5 from Federally Administered Tribal Areas and 2 from the federal capital area, elected by the members of the Provincial Assemblies. A constitutional amendment of 29 March 1976 provided 6 National Assembly seats reserved for non-Moslem minority representatives.

The Constitution obliges the Government to use such ways and means as may enable the people to order their lives collectively and individually in accordance with the principles of Islam. The Constitution (Ninth Amendment) Bill, 1986, consolidated Islam as the basis of law.

An Ombudsman was appointed in Jan. 1983.

National Flag: Green, charged at the centre, with a white crescent and white 5-pointed star, a white vertical stripe at the mast to one-quarter of the flag.

President: Ghulam Ishaq Khan.

Prime Minister: Mian Nawaz Sharif.

Provinces: Pakisant comprises the four provinces of Sind, Baluchistan, Punjab and the North-West Frontier Province, plus the Federal capital and 'tribal areas' under federal administration. Provincial governors are appointed by the President and are assisted by elected provincial councils.

The tribal areas (Khyber, Kurram, Malakand, Mohmand, North Waziristan, South Waziristan) are administered by political agents responsible to the federal government.

Kashmir: Pakistan controls the northern and western portions of Kashmir, an area of about 84,160 sq km with a population of about 2.8 m. in 1985. Under a United Nations resolution of 1949 its future is to be decided by plebiscite; it is still a disputed territory.

The people of Azad Kashmir (the west) have their own Assembly (42 members including 2 women), their own Council (of 14 members), High Court and Supreme Court. There is a Parliamentary form of Government with a Prime Minister as the executive head and the President as the constitutional head. Elections to the legislative's 40 general seats are to be held within 10 days of the general elections in Pakistan, according to a presidential proclamation of 8 Oct. 1977. The seat of government is Muzaffarabad.

The Pakistan Government is directly responsible for Gilgit and Baltistan (the north).

Administrative Divisions

Provinces:	Population 1981 census
Baluchistan	4,332,349
North-West Frontier Province	11,061,328
Punjab	47,292,441
Sind	19,028,666
Federally Administered Tribal Area	2,198,574
Federal Capital Territory: Islamabad	340,286
Total	84,253,644

International Relations: Pakistan is a member of the U.N., the Commonwealth, the Colombo Plan, and the South Asian Association for Regional Co-operation.

Treaties: A mutual defence assistance agreement between Pakistan and the USA was signed in Karachi on 19 May 1954.

Justice: The Central Judiciary consists of the Supreme Court of Pakistan, which is a court of record and has three-fold jurisdiction, namely, original, appellate and advisory. There are 4 High Courts in Lahore, Peshawar, Quetta and Karachi.

Religion: Religious groups (1981 census): Moslems, 96.68%; Christians, 1.55%; Hindus, 1.51%; Parsees, Buddhists and others. There is a Minorities Wing at the Religious Affairs Ministry to safeguard the constitutional rights of religious minorities.

Economy: Agriculture (including forestry and fishing) is the mainstay of Pakistan's economy, employing about 51% of the working population and providing 23.7% of the country's gross domestic product (GDP).

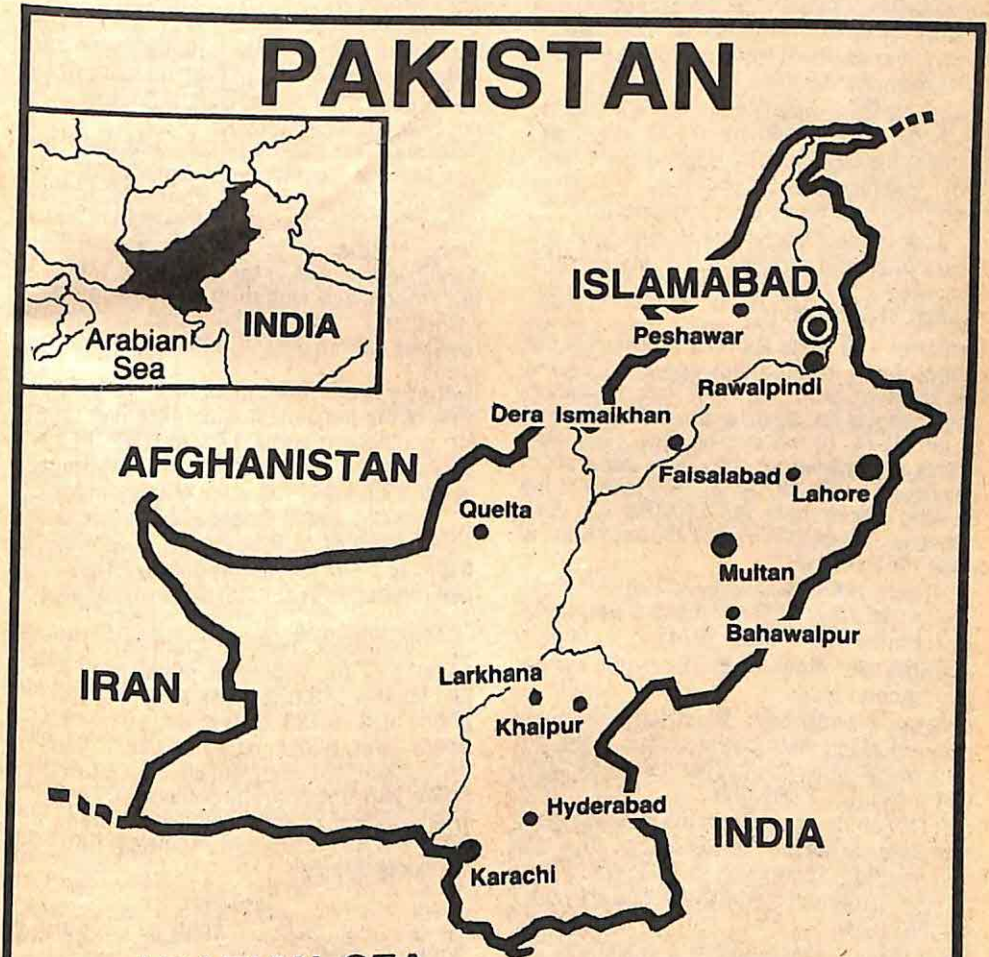
The entire area in the north and west is covered by great mountain ranges. The rest of the country consists of a fertile plain watered by 5 big rivers and their tributaries. Agriculture is dependent almost entirely on the irrigation system based on these rivers. The main crops are wheat, cotton, maize, sugar-cane and rice, while the Quetta and Kalat divisions (Baluchistan) are known for their fruits and dates.

Pakistan is self-sufficient in wheat, rice and sugar. Areas harvested, 1986-87: Wheat 7.7 m. hectares; rice 2.07 m.ha; sugar 762,000 ha.

Livestock (estimate 1987): Cattle, 16,900,000; buffaloes, 13,700,000; sheep, 26,600,000; goats 31,900,000; poultry 121.7 m.

Forestry: In 1983-84 the forest departments managed 6.8 m. hectares, including rangelands. Productive forests covered 1.29 m. hectares, and produced (1986-87) 733,000 cu. metre of timber and firewood. Forest lands are also used as national parks and wildlife and game reserves.

Fisheries: In 1987 (provisional) landings were



335,000 tonnes of marine and 84,000 tonnes of inland water fish.

The draft of the seventh Five-Year Plan (1988-93) envisaged total expenditure of Rs. 616,000 m., of which public-sector investment was estimated at Rs. 350,000 m. and private-sector investment at Rs. 266,000 m. As in the previous two plans, the seventh Plan laid particular emphasis on creating a larger role in industry for the private sector. Education, energy development and employment were also given priority.

Currency: The monetary unit is the Pakistan rupee. In March 1989 Rs. 19.47 = US $1. Decimal coinage was introduced on 1 Jan. 1961. The rupee, which previously consisted of 64 pice, now consists of 100 paisas.

Total monetary assets (including currency in circulation and deposits) on 31 March 1987 amounted to Rs. 230.978 m. Currency in circulation, Rs. 73,596 m.

Banking: The State Bank of Pakistan is the central bank; it came into operation as the Central Bank on 1 July 1948 with an authorized capital of Rs. 30 m. and was nationalized in Jan. 1974. At the end of June 1987 total assets or liabilities of the issue department amounted to Rs. 78,181 m. and those of the banking department Rs. 79,165 m.; total deposits, Rs. 48,675 m. It is the sole bank of issue for Pakistan.

There were 32 scheduled banks in Pakistan on 30 June 1987. Of these 9 were Pakistani (nationalized since 1974).

Weights and Measures: The metric system is in general use.

Energy, Resources: Electricity: Installed capacity of the state power system (1986-87) by type of generation: Thermal 3,263 MW., hydro-electric, 2,898 MW.

Oil: Oil comes mainly from the Potowar Plain, from fields at Meyal, Tut, Balkassar, Joya Mair and Dhullian. Production in 1988 was 2.4 m. tonnes. Oil reserves were also found at Dhodak in Dec. 1976.

Gas: Gas pipelines from Sui to Karachi 216 km (345 miles) and Multan (125 km) supply natural gas to industry and domestic consumers. A pipeline between Quetta and Shikarpur was constructed in 1982. There are 4 other productive fields.

Water: The Indus water treaty of 1960, concluded between India and Pakistan, has created the basis for a large-scale development programme. The Indus Basin Development Fund Agreement has been subscribed by Australia, Canada, Federal Republic of Germany, New Zealand, UK and USA and is administered by the International Bank; the works to be constructed call for an expenditure of US $1,000 m.

The largest project is the construction of the Tarbela Dam, an earth-and-rock filled dam on the river Indus, 148 m (485 ft.) high, which has a gross storage capacity of 11.1 m. acre feet of water for irrigation.

Minerals: The main agencies are the Pakistan Mineral Development Corporation, the Resource Development Corporation and the Gemstone Corporation of Pakistan. Coal is mined at Sharigh and Hamai on the Sind-Pishin railway and in the Bolan pass, also in Sor Range and Degari in the Quetta-Pishin district and in the Punjab; total recoverable reserves, about 480 m. tonnes, mainly low-grade.

Industry and Trade: Industry employs about 10% of the population. Manufacturing (1987-88) contributed about 17% to GNP. In 1972 public sector companies were re-organized under a Board of Industrial Management.

A public sector steel-mill (Pakistan Steel) has been built at Port Qasim near Karachi, capacity 1.1 m. tonnes; production of coke and pig-iron began in autumn 1981 and of steel in 1983.

Production 1987-88 (tonnes): Refined sugar 1.77 m.; vegetable products 685,546; jute textiles 113,602; soda ash 134,106; sulphuric acid 78,723; caustic soda 61,344; chip board and paper board 70,027; bicycles 661,183 units; cotton cloth 280.9 m. sq. metres; cotton yarn 685.5 m. kg.; cement 7.04 m.; steel billets 271,367; hot-rolled steel sheets and coils 475,621; cold-rolled 154,550; mild steel products 867,565.

Imports

	1986-87	1987-88
Minerals, fuels, lubricants	14,806.2	18,057.5
Machinery and transport equipments	27,543.5	32,869.0
Edible oils	5,003.4	8,977.0
Chemicals	15,773.1	17,612.5
Raw cotton	7,675.8	10,758.6

Exports		
Cotton cloth	5,931.1	8,539.5
Cotton yarns	8,765.6	9,597.4
Rice	5,052.6	6.404.4
Leather	....	5,041.5
Carpets, tapestries	3,419.5	4,418.2

Communications: Roads: In 1985-86 Pakistan had 106,580 km of roads, of which 45,686 km were all-weather roads. The Karakoram highway to the Chinese border, through Kohistan and the Hunza valley, was opened in 1978. An all-weather road linking Skardu and the remote NE Indus valley to the highways was built in 1980.

In 1986 there were 2 m. vehicles registered, including 946,861 motor-cycles and 474,744 cars, jeeps and station wagons.

Railways: Pakistan Railways had (1986) a route of 8,775 km (of which 290 km electrified) mainly on 1,676 mm gauge, with some metre gauge and narrow gauge lines. In 1986-87 there were 83 m. passengers and 11.6 m. tonnes of freight.

Aviation: Karachi is served by a large number of international airlines.

Pakistan International Airlines (founded 1955; the majority of shares are held by the Government) had 4 DC-10s, 7 Boeing 707Cs, five 720Bs, two 747Bs and 8 Fokker F27s in 1977; 2 other Boeing 720Bs were on lease to Air Malta. Services operate to 20 home airports and foreign destinations.

Shipping: There is a seaport at Karachi, dry-cargo-handling capacity 6 m. tonnes a year and oil-handling, 10 m. The second port, 39 km east of Karachi, is Port Muhammad Bin Qasim.

The Pakistan National Shipping Corporation had 35 vessels in 1985, of 596,973 DWT.

Post and Telecommunication: The telegraph and telephone system is government-owned. Telephones, on 31 March 1987, numbered 643,500; a nationwide dialling system is in operation between 46 cities. In 1987 there were 12,116 post offices. Pakistan has international telephone connections by 102 satellite, 7 HF, 4 microwave and 10 carrier circuits, and an international direct-dialling exchange.

Education: Education in Pakistan is not compulsory. Primary education begins at five years of age and lasts for five years. Secondary education, beginning at the age of 10, lasts for upto seven years.

In 1986/87 it was estimated that there were 8,081,000 children enrolled at primary schools and 2,661,000 at middle and secondary schools. The Government was unable to achieve its target of providing universal primary education for boys by 1983, and for girls by 1987.

All institutions except missions are nationalized. From 1976 agrotechnical subjects were introduced into the school curriculum, and 25 trade schools were established in 1976. There are 22 universities. Government spending on education in 1985/86 was an estimated Rs. 11,317.7 m. The average rate of adult literacy declined from 79.3% in 1972 to 73.8% (males 64.0%; females 84.8%) in 1981. In 1985, according to estimates by UNESCO, the rate was 70.4% (males 60.1%; females 81.4%).

At the census 1981, 23.3% of the population were able to read and write. Estimate (1985), 26%. Adult literacy programmes have been established.

The principle of free and compulsory primary education has been accepted as the responsibility of the state.

	Total pupils	*Female pupils*
Primary	7,368,000	2,548,000
Middle	2,004,000	545,000
High	690,000	185,000
Colleges	502,000	153,000
Universities	65,000	10,000

Health: In 1987 (provisional) there were 679 hospitals and 3,501 dispensaries (59,987 beds) and 51,020 doctors. There were 798 maternity and child welfare centres.

Defence: Army: The Army consists of two armoured and 17 infantry divisions; 4 independent armoured, 8 independent infantry, 8 artillery and 3 anti-aircraft brigades; 6 armoured reconnaissance regiments, 7 surface-to-air missile batteries and 1 Special Services Group. Strength (1989) 450,000, with a further 500,000 reservists. There are also 164,000 men in para-military units: National Guard, Frontier Corps, Pakistan Rangers, Coast-Guard and Frontier Constabulary.

Navy: The fleet comprises 6 diesel-powered patrol submarines (completed in France in 1969-80), 3 midget submarines, 1 "County" class destroyer, Babur (ex-HMS London) transferred from the Royal Navy in 1982, 7 very old destroyers (6 ex-US and 1 ex-British), 4 ex-Chinese corvette-type patrol vessels, 8 ex-Chinese fast missile craft, 12 ex-Chinese fast gunboats, 4 ex-Chinese fast (hydrofoil) torpedo boats, 1 seaward defence boat, 1 oceanographic survey ship, 3 coastal mine-sweepers, 1 fleet replenishment ship, 1 degaussing vessel, 1 rescue ship, 2 landing crafts, 1 water carrier and 4 tugs. The naval air arm has 4 Atlantics and 2 Fokker F27s for patrol and transport duties, 5 Sea King anti-submarine warfare helicopters and 4 Alouette III liaison helicopters.

The principal naval base and dockyard are at Karachi. Naval personnel in 1988 totalled 1,250 officers and 14,550 ratings.

Air Force: The Pakistan Air Force came into being on 14 Aug. 1947. It has its headquarters at Peshawar and is organized within 3 air defence sectors, in the northern, central and southern areas of the country. Air defence units include 2 squadrons of F-16 Fighting Falcons and at least 6 squadrons of Chinese-built F-6s (MiG-19). Tactical units include 5 squadrons of Mirage III-EP/5 supersonic fighters and 6 with A-5 fighter-bombers, 1 squadron equipped with Mirage III-RP reconnaissance aircraft and 1 with C-130 Hercules turboprop transports. Flying training schools are equipped with Masshaq (Saab Supporter) armed piston-engined primary trainers, T-37B/C jet trainers supplied by the USA, Mirage III-DPs and Chinese-built FT-5s (two-seat MiG-17s) and FT-6s (two-seat MiG-19s). A VIP transport squadron operates the Presidential F27 turboprop aircraft, 3 four-jet Boeing 707s, 3 twin-jet Falcon 20s and a Puma helicopter.

There is a flying college at Risalpur and an aeronautical engineering college at Korangi Creek. Total strength in 1989 was about 400 combat aircraft and 17,600 all ranks.

Press, Radio & TV: Dailies and periodicals numbered, 1,748 in 1987; 125 were dailies, 346 weeklies and twice-weeklies, 718 monthlies and 414 quarterlies. Top circulation 1 m. for Urdu daily papers, followed by 377,300 for Urdu weeklies, then 201,169 for English dailies. Papers are also published in Sindhi, Gujarati, Pushtu, Baluch, Arabic and Saraiki.

The first Urdu-language newspaper, the daily *Urdu Akhbar,* was founded in 1836. After 1947, with the establishment of Pakistan and the introduction of modern equipment, the more influential English-language newspapers, such as *Dawn* and *The Pakistan Times,* were firmly established, while several new Urdu newspapers, for example *Nawa-i-Waqt Jang,* became very popular.

The Urdu press comprises almost 800 newspapers, with *Daily Jang, Imroze, Nawa-i-Waqt, Jasarat* and *Mashriq* among the most influential. The largest daily is *Daily Jang.* Although the English-language press reaches only 2% of the population and totals 128 publications, it is influential in political, academic and professional circles.

Pakistan Broadcasting Corporation: Islamabad; f. 1947 as Radio Pakistan; home service 270 hrs daily in 22 languages; external services 19 hrs daily in 15 languages.

National broadcasting network comprises 22 stations in Bahawalpur, Dera Ismail Khan, Faisalabad, Gilgit, Hyderabad, Islamabad, Karachi, Khaipur Mir, Khuzder (Baluchistan), Lahore, Multan, Peshawar, Quetta, Rawalpindi, Skardu and Turbat.

Pakistan Television Corporation Ltd.: Federal TV Complex, Constitution Ave, POB 1221, Islamabad; f. 1967; daily transmissions from 12.30 to 18.30; extended transmissions on Fridays. In 1986 there were an estimated 5.2 m. radio receivers in use, and 1.1 m. television licences.

Tourism: The Himalayan hill stations of Pakistan provide magnificent scenery, a fine climate and excellent opportunities for field sports, mountaineering and winter sports. The country received 432,000 foreign visitors in 1986, and in that year receipts from tourism amounted to US $180m.

Of the visitors 207,300 came from India: 106,800 from Europe, including 65,600 from UK.

SRI LANKA

Capital: Colombo; **Area:** 61,610 sq km: **Population:** 16.9 m.; **Language:** Sinhala, Tamil & English; **Literacy:** 87%; **Religion:** Buddhism, Christianity and Islam; **Currency:** Rupee, 1 US$= Rs, 33.24; **GNP per capita:** $420.

Physiography: Sri Lanka is an island in the Indian Ocean about 80 km (50 miles) east of the southern tip of India.

The climate is tropical, with an average annual temperature of about 27°C (81°F) in Colombo. There is very little seasonal variation in temperature: the monthly average in Colombo ranges from 25°C (77°F) to 28°C (82°F). The south-western part of the island receives rain from both the south-west and the north-east monsoons: average annual rainfall in Colombo is 2,365 mm (93 in).

Sinhala, Tamil and English are all recognised national languages. The official language, Sinhala, is spoken by over 70% of the people. Nearly 70% of the population are Buddhist, about 15% are Tamil-speaking Hindus and there are important Christian (mostly Roman Catholic) and Muslim minorities.

The capital is Colombo. The seat of government returned to the ancient capital of Sri Jayawardenepura Kotte in 1982, in preparation for the transfer of the capital.

On 28 June 1974 the frontier between India and Sri Lanka in the Palk Strait was redefined, giving to Sri Lanka the island of Kachchativu.

Population (1981 census), 14,8846,750 an increase of 17% since 1971. Population (in 1,000) according to race and nationality: 10,980 Sinhalese, 1887 Ceylon Tamils, 1,047 Ceylon Moors, 39 Burghers, 47 Malays, 819 Indian Tamils, 28 others. Non-nationals of Sri Lanka totalled 635,150. By agreement with the Government of India in 1964 and 1974, Indian nationals who have not been granted Sri Lanka citizenship were to be repatriated. The 1964 agreement covered 525,000 people; the 1974 agreement, 75,000.

Area (in sq km) and census population of 17 March 1981:

Provinces	Area	Population
Western	3,708.61	3,919,807
Central	5,583.50	2,009,248
Southern	5,559.15	1,882,661
North-Eastern	18,833.37	2,084,655
North-Western	7,812.18	1,704,334
North-Central	10,723.59	849,492
Uva	8,487.91	914,522
Sabaragamuwa	4,901.55	1,482,031
Total	65,609.86	14,846,750

Principal Towns

	1981 Census
Colombo (capital)	587,647
Dehiwela-Mt, Lavinia	173,529
Moratuwa	134,826
Jaffna	118,224
Kotte	101,039
Kandy	97,827
Galle	76,863
Negombo	60,762
Trincomalee	44,313
Batticaloa	42,963
Matara	38,843
Ratnapura	37,497
Anuradhapura	35,981
Badulla	33,068
Kalutara	31,503

Population of the Greater Colombo area 1980 about 1 m.,

History: The Portuguese arrived in Ceylon at the beginning of the 16th century. They settled on the west coast and converted many of the inhabitants to Christianity. One hundred years later they were replaced by the Dutch, who occupied most of the coastal region; only the kingdom of Kandy in the centre of the country retained its independence. The Dutch were evicted by the British, to whom Kandy surrendered in 1815. The country became independent on 4 February 1948 and 22 May 1972, the Republic of Sri Lanka was created. Before the new republican constitution was promulgated, a youth insurrection in April 1971 rocked prime minister Sirimavo Bandaranaike's United Front government, leading to her imposing several harsh socialist measures. By the 1977 general election, a country tired of endemic scarcities and rising prices swept her out of office.

The United National Party (UNP) administration of Prime Minister Junius Jayewardene which took over replaced the 1972 constitution and Jayewardene assumed unprecedented power as executive president, becoming both head of state and head of government. He was elected to a second six-year term in October 1982, and in a referendum won a mandate to extend parliament to 1989. In late 1988, former prime minister Ranasinghe Premadasa was elected executive president for a 6-year term.

The Tamils in Sri Lanka have been fighting for more power for over a decade. In 1978 some concessions such as the recognition of the Tamil language were made. TULF-Tamil United Liberation Front—spearheaded the agitation. Later more militant organisations like the LTTE—Liberation Tigers of Tamil Eelam—and EPRLF—Eelam People's Revolutionary Liberation Front—and an extremist group JVP—Janatha Vimukti Peramuna - took the cudgels.

On 29 July 1987, however, an important breakthrough was made when President Jayawardene and the Indian Prime Minister, Rajiv Gandhi signed an accord regarding a settlement of the country's ethnic crisis. Accordingly an IPKF—Indian Peacekeeping Force—was sent to the island to end the hostilities and supervise surrender of arms.

In November, Parliament adopted the legislation establishing provincial councils. In the election held in the North Eastern Province under the Peace Plan, Varadaraja Perumal of EPRLF became Chief Minister.

On January 11, 1989 emergency was lifted after more than $5^{1}/_{2}$ years and general elections held in February. UNP—United National Party—won and the former Finance Minister D.B. Wijetunge was appointed Prime Minister.

Despite the continuance of brutal killings, IPKF started pulling out its forces from Sri Lanka on 20th September, 1989.

Negotiations have been held with India since 1964 on the repatriation of stateless Tamils of Indian origin. In 1985 India granted citizenship to 600,000 people, while Sri Lanka agreed to accept the remaining 469,000 as citizens.

Government: A new constitution for the Democratic Socialist Republic of Sri Lanka was promulgated in Sept. 1978.

The Executive President is directly elected by the people and has to receive more than one-half of the valid votes cast. His term of office is six years and he shall not hold the office for more than two consecutive terms. He is the Head of the State, the Head of the Executive and of the Government and the Commander-in-chief of the Armed Forces. He does not have any veto power over legislation; even in a time of public emergency, he must act with Parliamentary control and approval.

National Flag: A yellow field bearing 2 panels: In the hoist 2 vertical stripes of green and orange, in the fly, dark red with a gold lion holding a sword and in each corner a gold 'bo' leaf.

The Cabinet was as follows in March 1989:

President: Ranasinghe Premadasa.
Prime Minister: D.B. Wijetunge.

For purposes of general administration, the island is divided into 25 districts, administered by government agents. There are 12 municipal councils and 24 district councils.

Districts

	Area (sq km) excl. inland water)	Population* (1987 mid-year)	Density* (persons per sq km)
Colombo	656.7	1,863,000	2,837
Gampaha	1,386.6	1,480,000	1,067
Kurungela	4,812.8	1,354,000	281
Kandy	1,906.3	1,204,000	632
Kalutara	1,588.6	904,000	569
Galle	1,635.6	894,000	547
Ratnapura	3,255.4	882,000	271
Jaffna	983.6	838,000	852
Matara	1,282.5	730,000	569
Kegalle	1,692.8	727,000	429
Badulla	2,802.8	679,000	242
Anuradhapura	7,034.3	670,000	95
Puttalam Chilaar	3,013.4	562.000	187
Nuwara-Eliya	1,720.5	522,000	303

Hambantota	2,579.3	486,000	188
Amparai	4,318.2	447,000	104
Matale	1,993.3	398,000	200
Batticaloa	2,686.3	386,000	144
Moneragala	5,545.6	327,000	59
Polonnaruwa	3,224.2	299,000	93
Trincomalee	2,630.8	297,000	113
Mannar	1,985.2	122,000	61
Vavuniya	1,966.9	109,000	55
Kilinochchi	1,235.0	93,000	75
Mullativu	2,516.9	88,000	35
Total	64,543.6	16,361.000	254

* Provincial

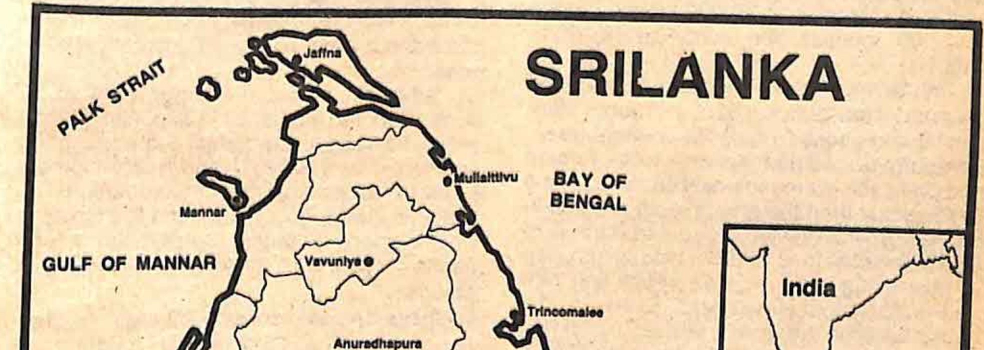
International Relations: Sri Lanka is a member of UN, the Commonwealth, the Non-Aligned Movement, the South Asian Association for Regional Co-operation and the Colombo Plan.

Justice: The systems of law which obtain in Sri Lanka are the Roman-Dutch law, the English law, the Tesawalamai, the Moslem law and the Kandyan Law.

The courts of original jurisdiction are the High Court, District Courts, Magistrates Courts and Primary Courts.

The Supreme Court is the highest and final superior court of record.

Religion: Buddhism was introduced from India in the 3rd century B.C. and is the religion of 69.3% of the inhabitants. There were (1981)



10,288,325 Buddhists, 2,297,806 Hindus, 1,130,568 Christians, 1,121,717 Moslems and 8,334 others.

Economy: Sri Lanka's predominantly rural population is concentrated in the west, south and south-west regions, where rubber, tea and coconuts are grown. About one-half of the working population are engaged in agriculture, forestry and fishing, which together provided 22.9% of the gross domestic product (GDP).

The area of the island is 6,561,000 hectares, of which about 2m. hectares are under cultivation. Agriculture engages about 45% of the labour force. The main crops in 1986 were as follows: Paddy (2.6m. tonnes from 836,000 hectares), rubber (137,000 tonnes), tea (211,000 tonnes) and coconuts (3,039m. nuts).

In 1987 the State owned about 60% of the area under tea, about 30% of the rubber plantations and about 10% of the coconut trees. Company-owned tea estates, both foreign and domestic, were nationalized in 1972 and 1975. Since then the annual output of made tea has never equalled the record harvest of 228,000 metric tons in 1965, mainly because of mismanagement, a slow replanting rate and a shortage of workers. Even so, Sri Lanka became the world's largest exporter of tea in 1978, when tea and rubber (plantation crops) and coconut (a smallholders' crop) together contributed about 70% of total export earnings.

Livestock in 1987 (estimate): 1,807,000 cattle, 1,008,000 buffaloes, 97,000 swine, 530,000 goats and sheep, 9m. poultry.

Fisheries: Production for 1986 was 183,056m. tons including 144,266 m. tons of coastal water fish, 35,390m. tons of fresh water fish and 3,400m. tons from deep-sea fisheries. In 1986 (provisional) there were 27,792 fishing craft, of which 14,387 were not motorized.

Planning: The 1987-91 plan aims at 4.6% annual growth rate. Investment allocated is mainly for power and water, including the Mahaweli energy and irrigation scheme, road repairs and telecommunication. Total public investment, about Rs. 154,156m.

Currency: The Monetary Law Act provides that the standard monetary unit is the Sri Lankan *rupee*.

The Central Bank is the sole authority for the issue of currency and coins. The main commercial banks in Sri Lanka are: The Bank of Ceylon and the People's Bank (state-managed), the State Bank of India, Grindlays Bank, the Hongkong and Shanghai Banking Corporation, the Standard Chartered Bank, the Commercial Bank of Ceylon, the Hatton National Bank, the Habib Bank (Overseas) Ltd., Indo-Suez Bank, Bank of Credit and Commerce International, American Express and the Indian Overseas Bank Ltd. Total assets of 25 commercial banks at 30 June 1986, Rs. 63,632.3m.

The state-owned Ceylon Insurance Corporation and the National Insurance Corporation have a monopoly of all insurance business.

Sri Lanka National Savings Bank at 30 June 1986 had a balance to depositors credit of Rs. 13,615.2m. Sri Lanka State Mortgage and Investment Bank, National Development Bank, Development Finance Corporation, The National Housing Authority and the Housing Development Finance Corporation of Sri Lanka Ltd. are the main long-term credit institutions.

Weights and Measures: The metric system has been established by the Weights and Measures (Amendment) Law No. 24 of 1974 and subsequent legislation.

Energy and Resources: Installed capacity of electric energy (1986), 1,065,250 kw. Energy produced 2,653 m. kwh; the main source is hydro-electricity (producing 2,645 m. kwh). The Mahaweli power scheme had 2 large hydro-power plants commissioned in 1985: Victoria and Kothmale. The Randenigala hydro-power plant was commissioned in 1986 (two 61 Mw units). Supply 230 volts; 50 Hz.

Water: The Mahaweli. Ganga irrigation scheme is (1987) irrigating 41,000 hectares of new land and 77,000 hectares of land already cultivated. There is a Water Resources Board (set up in 1966) and a National Water Supply and Drainage Board (1974).

Minerals: Gems are among the chief minerals mined and exported. Precious and semi-precious stones are found among the layers of older alluvium and river gravels of quaternary age in the valleys of the Ratnapura district in the south-west. The most important are sapphire, ruby, crysoberyl, beryl, topaz, spinel, garnet, ziran and tourmaline. Value of gemstones exported in 1986, Rs. 755 m.

Graphite is also important. The State Graphite Corporation was set up in 1971. There were 3 large mines (Bogala, Kahatagaha and Kalangaha), and several smaller mines. Graphite produced (tonnes), 1985, 7,413; 1986, 7,708.

Industry and Trade: The private sector has been encouraged since 1977, with Investment Promotion Zones and freedom for imports. The public sector still accounts for about 60% of total production.

The main industries are food, beverages and tobacco; textiles, clothing and leather goods; chemicals, petroleum, rubber and plastics.

Principal exports (domestic) in 1986 (in Rs. million): Tea, 9,253; rubber, 2,622; copra, coconut oil and desiccated coconut, 1,609; other crops, 780; textiles and garments, 9,629; precious and semi-precious stones, 1,182.

Principal imports (in Rs. million) in 1986 were petroleum, 6,203; machinery and equipment, 5,828; vehicles and transport equipment, 1,457; food and beverages, 6,746.

Education: Education is officially compulsory for 10 years between five and 15 years of age, and it is available free of charge from lower kindergarten to university age. There were three types of school: state-controlled schools (mostly co-educational), denominational schools and Pirivenas (for Buddhist clergy and lay students).

Primary education begins at the age of five and lasts for six years. Secondary education, beginning at 11 years of age, lasts for up to seven years, comprising a first cycle of five years and a second of two years.

In 1986 there were 10,099 schools including 9,656 government schools. The rest were private and estate schools, and Pirivenas. The government schools had 142,630 teachers and 3.7m. students from grades kindergarten to XII. Ministry of Education expenditure (1986), Rs. 4,117.8m. Education is now administered under 31 regional directors.

There were 8 universities: Peradeniya, Colombo, Jaffna, Sri Jayawardenepura, Moratuwa, Kelaniya, Eastern and Ruhuna. An Open University, Dumbara Campus, comes under Peradeniya University. There are 8 institutes (4 for postgraduate and 4 for undergraduate studies).

In 1985 there were 18,913 students and 2,051 teachers in the 7 Universities and 1 University College. The Open University had 9,287 students. Postgraduate Institutes had 519 students, the others, 1,214. There were 23 institutions for technical education, 9 of which had grade one status; total enrolment (1985), 20,796.

Health: In 1986 there were 497 hospitals; including 88 maternity, and 341 central dispensaries. Hospitals had 46,005 beds and there were 2,222 Department of Health doctors. Total state budget expenditure on health, 1986, Rs. 2,095m.

Communications: Roads: There are about 25,650 km of motorable roads, of which 82% are blacktopped. Number of motor vehicles, 31 Dec. 1985, 523,723, including 148,587 private cars and cabs, 98,859 lorries, 75,474 tractors, 161,3373 motor cycles, 38,309 buses.

Railways: In 1986 there were about 1,453 km of railway open, of which 1,394 km were broad gauge and 59 narrow gauge. In 1987 railways ran 1,881m. passenger km and 204m. tonne-km.

Aviation: Air Lanka operates international services. Foreign airlines which operate scheduled services to Sri Lanka are British Airways, Indian Airlines, Aerofloat, KLM, Singapore Airlines, Thai Airways International, Pakistan International Airlines, Gulf Air, Royal Nepal Airlines, Kuwait Airways, Saudi Air, Emirates and UTA French Airlines; various others operate charter services. International services are operated by Upali, Air Taxis and Consolidated Engineering.

Shipping: In 1986, merchant vessels totalling 25.7m. GRT entered the ports of Sri Lanka. The Sri Lanka Shipping Corporation began functioning as ship-owners, charterers, brokers and shipping agents in 1971. The

$1=leks 5,89, **per capita:** $ 930 leks.

Albania lies on the west coast of the Balkan peninsula in south-east Europe. Alhania was first established as an independent state in 1912. Communist Government.

More than 40 per cent of the land is farmland producing wheat, maize, sugar beet, cotton and tobacco and supporting a heavy livestock population mainly sheep and goats. The important minerals are coal, oil, chrome, copper and nickel. Industries include textiles, woollen fabrics, leather goods, petrol, cement, sugar, beer and cigarettes.

Head of state: Ramiz Alia. **P.M.:** FaFos.

ALGERIA

Cap: Algiers: **Area:** 2,381,741 sq km. **Pop.** 25,063,000. **Lang:** Arabic and French; **Literacy:** 52%; **Rel:** Islam; **Currency:** Dinar; $1=DA 6.77. **per capita:** $2570.

Algeria is an independent republic in North Africa and extends for 1000 km along the shores of the Mediterranean. The plains lying along the coast are very fertile. The Atlas Mountains reaching to altitudes of some 2500 m split the country into two. Algeria became an independent republic on July 3, 1962.

Agricultural products include wheat, barley, potatoes, artichokes, flax and tobacco. Fruits like dates, pomegranates and figs grow in abundance. Wine and olive oil are also produced. Cattle raising, however, is the most important occupation. Important minerals are iron, zinc, mercury, copper, antimony, phosphates and petroleum.

President: Chadli Benjedid, **P.M.:** Mouloud Hamrouche.

Mission in India: Embassy of the Democratic and Popular Republic of Algeria, 15, Anand Lok, New Delhi-110 049. Tel: 655216.

ANDORRA

Cap: Andorre-la-Vieille; **Area:** 464 sq km; **Pop:** 56,000. **Lang:** Catalan; **Literacy:** 99%; **Rel:** Christianity; **Currency:** French franc, Peseta (Spain).

The principality of Andorra, founded in 1278, lies in the valleys of Eastern Pyrenees, between France and Spain, about half-way between Barcelona and Toulouse.

Andorra has no proper constitution and its international status is dubious. It is nominally subject to the suzerainty of France and the Bishop of Urgel in Spain.

The government is carried on by a council of 28 elected members.

Andorra is an agricultural country, cereals, potatoes and tobacco being the principal crops. Iron, lead, alum, stone and timber are the principal products, though tourism is the main source of income.

Head of Govt: Josef Pantat Solaus. **First Syndic:** Francesc Cerqueda- Pascuet.

ANGOLA

Cap: Luanda; **Area:** 1,246,699 sq km; **Pop:** 8,971,000; **Lang:** Portuguese, Bantu; **Literacy:** 30%; **Rel:** Tribal and Christianity; **Currency:** Kwanza; $1=30.89 Kwanza. **per capita:** $500.

Angola, formerly Portuguese West Africa, became an independent state in 1975.

The important food crops are millet, maize and cassava. The main cash crops are coffee, cotton, oil palm and sisal. Industries comprise textiles, brewing, cement, oil refining and sugar. Angola is famous for its gemstones and produces about one-tenth of the total world supply. The main exports are crude petroleum, coffee, diamonds, iron ore, fish, sisal and timber.

President: Jose Eduardo dos Santos.

ANTIGUA & BARBUDA

Cap: St. John's; **Area:** 280 sq km; **Pop:** 86,000; **Lang:** English and Patois: **Literacy:** 90% **Rel:** Christianity; **Currency:** Eastern Caribbean Dollar US $1=EC$2.71. **per capita:** $ 2380.

Antigua, one of the islands of British West Indies, is politically linked to two islands Barbuda and Redonda. Redonda is uninhabited. Antigua and Barbuda became independent on Nov. 1, 1981.

The population is of mixed European-Negro origin. The economy is agricultural. Sugar and sea island cotton are the main exports. Tourism is a major source of income.

Governor-General: Sir Wilfred Ebenezer Jacobs. **P.M:** Vere C. Bird.

ARGENTINA

Cap: Buenos Aires; **Area:** 2,766,889 sq km; **Pop:** 32,617,000; **Lang:** Spanish; **Literacy:** 94%; **Rel:** Christianity; **Currency:** Austral; $1=18.61 Austral, **per capita:** $ 2350.

Argentina lies at the tip of South America extending for some 3700 km from Bolivia to Cape Horn. Its maximum width is 1500 km. The highest peak in the Americas, *Aconcagua,* is in Argentina. Argentina became an independent republic in 1810.

Argentina abounds in deposits of coal, lead, copper, zinc, gold, silver and sulphur. Petroleum is also found. Meat packing is the chief industry, with flour milling coming second. Agriculture and animal husbandry form important segments of the economy.

President: Carlos Menem.

Mission in India: Embassy of the Argentine Republic, B-8/9, Vasant Vihar, Paschimi Marg, New Delhi-110 057. Tel: 671345.

AUSTRALIA

Cap: Canberra. **Area:** 7,682,300 sq km; **Lang:** English; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Australian Dollar US$1 = 1.23 Australian Dollars. **per capita:** $ 16050.

Australia occupies the whole of the island continent of Australia, lying between the Indian and Pacific Oceans and its offshore islands, principally Tasmania to the south east.

It has a unique assortment of flora and fauna not found elsewhere in the world. The number of aborigines living in Australia is about 160,000. About half the aborigines live in cities or towns. They participate at all levels of life of the Australian community. Many aborigines still live in the remote areas of Australia and prefer traditional tribal oriented lifestyles. The boomerang was invented by the aborigines who have lived in Australia for more than 40,000 years.

Australia is a multicultural society. Four out of 10 Australians are first or second generation immigrants. One in five of the population is overseas born. In the past most immigrants came from Europe, but now, under Australia's non-discriminatory immigration policy, they come from well over 100 countries. One of the most sparsely populated nations, it is also one of the most highly urbanised with 85 per cent of the population living in cities. Vast areas of the continent receive only very small amounts of rainfall limiting development mainly to the coastal fringes.

Australia is a Federation with power divided broadly between the national Government and six State governments. The powers of the Australian Parliament are laid down in a written constitution which came into force on January 1, 1901, when the colonies federated to form the Commonwealth of Australia. The states are New South Wales, Victoria, Queensland, South Australia, Western Australia and Tasmania.

State Capitals: Sydney, Melbourne, Brisbane, Adelaide, Perth and Hobart.

In March 1986, Queen Elizabeth II signed the Proclamation of the Australia Act 1986, which severed Australia's last remaining constitutional links with Britain. Queen Elizabeth is formally Queen of Australia.

During the 20th century Australia has developed into a modern industrial nation built upon the solid foundation of an efficient and productive agricultural system and large reserves of minerals. Australia is now an important producer and exporter of a wide range of agricultural products especially wool, wheat and meat and its mines provide minerals and metals of many types including coal, iron-ore, bauxite, gold, silver, lead, zinc, copper, nickel, oil and natural gas for use by local and overseas industries.

Australia celebrated its bicentenary in 1988 to mark the 200th anniversary of European settlement. Australia Day is celebrated on January 26.

Governor-General: William George Hayden. **P.M:** Robert James Lee (Bob) Hawke.

Mission in India: High Commission of Australia, 1/50-G, Shantipath, Chanakyapuri, New Delhi-110 021. Tel: 601336.

AUSTRIA

Cap: Vienna; **Area:** 83,853 sq km; **Pop:** 7,555,000; **Lang:** German; **Literacy:** 98%; **Rel:** Christianity; **Currency: Schilling:** $1 =

Bicentenary of Mozart

The bicentenary of Wolfgang Amadeus Mozart's death was observed throughout Europe in 1991.

More than 25 European cities and regional authorities in eight countries organised musical programmes in celebration of the event. They included Austria, Switzerland, Czechoslovakia, the Federal Republic of Germany, the German Democratic Republic, France, Great Britain and Italy.

Mozart (1756-1791), one of the world's great musical geniuses, who wrote masterpieces in every branch of music was born in Salzburg, Austria on January 27, 1756.

13.02 Schilling. **per capita:** $ 2,297.

A republic in Central Europe since 1918, Austria regained full sovereignty in 1955. Over 65 per cent of the country is mountainous.

Economy depends mainly on mining, manufacturing, trade and services. Austria has iron ore and oil deposits, lignite, manganese, lead and some copper. Austrian capital houses UN organisations like UNIDO and IAEA and international bodies like OPEC. Tourism is highly developed.

President: Dr. Kurt Waldheim. **Chancellor:** Dr. Franz Vranitzky.

Mission in India: Embassy of Austria, EP-13, Chandragupt Marg, Chanakyapuri, New Delhi-110 021. Tel: 601112.

Consulate: 96/1, Sarat Bose Road, Calcutta-26. Tel: 47-2795.

Kothari Building, Nungambakkam High Road, Madras-600 034.

THE BAHAMAS

Cap: Nassau; **Area:** 13,939 sq km; **Pop:** 247,000; **Lang:** English; **Literacy:** 93%; **Rel:** Christianity; **Currency:** Bahamian Dollar, $1 = BD 1. **per capita:** $7190.

The *Commonwealth of the Bahamas* is an archipelago lying off the south-east coast of Florida. The Bahamas consists of more than 700 islands and 2000 cays and rocks. Only about 30 of the islands are inhabited. The largest island is *Andros* but *New Providence* is the most populous. The capital *Nassau* is situated on this island. Eighty-five per cent of the population is *Negro,* the rest are *Europeans.*

The Bahamas became internally, self-governing in 1964 and fully independent in 1973.

Education is free and compulsory between the age of 5 and 14.

Tourism is the main industry. Fishing constitutes the main occupation. Vegetables and fruits are also grown.

Governor-General: Sir Henry Taylor. **P.M:** Lynden O. Pindling.

BAHRAIN

Cap: Manama; **Area:** 669 sq km., **Pop:** 483,000; **Lang:** Arabic and English; **Literacy:** 74%; **Rel:** Islam; **Currency:** Dinar, $ 1 = BD 0.379; **per capita:** $ 8530.

Bahrain, which became an independent state on Aug. 15, 1971, is an Arab state comprising 33 small islands in the Arabian Gulf. Bahrain is the biggest of the islands and has lent its name to the whole archipelago. It is an independent monarchy.

The traditional occupations of cattle breeding, agriculture and fishing are still practised but many modern industries have also come up. Oil accounts for the lion's share of the state revenues.

The people enjoy a very high standard of living. Education is free upto the secondary level and heavily subsidised with scholarships at higher levels.

Amir: Shaikh Isa bin Sulman Al Khalifa. **P.M.:** Shaikh Khalifa bin Sulman Al Khalifa.

BANGLADESH

(See South Asia)

BARBADOS

Cap: Bridgetown; **Area:** 430 sq km; **Pop:** 256,000; **Lang:** English; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Barbados Dollar (BD). $1 = BD $2.02; **per capita:** $ 4668.

The island of Barbados is the most easterly of the Caribbean islands, lying about 400 km north east of the mainland of South America. It is included in the Windward Isles. Barbados became fully self-governing within the Commonwealth on Nov. 30, 1966.

Agriculture and tourism dominate the economy of Barbados. Sugar, molassses and rum account for 90 per cent of exports.

Head of State: Queen Elizabeth II. **Governor-General:** Sir Hugh Springer. **P.M.:** Erskine Sandiford.

BELGIUM

Cap: Brussels; **Area:** 30,521 sq km; **Pop:** 9,897,000; **Lang:** Dutch and French; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Franc. $1 =F 38.84, **per capita:** $ 9230.

Belgium, named after the Belgae, people of ancient Gaul who crossed the Rhine about the 6th century B.C., has had a turbulent history. It became an independent monarchy in 1830. During both the world wars it was occupied by Germany but freed itself by the end of those wars.

Belgium is the most densely populated country in Europe. Although it is essentially a manufacturing country, agriculture and forestry are also very important. The main crops are oats, rye, wheat, potatoes, barley and sugar beets. Coal is the country's only important mineral. Principal industries are steel and metal products, textiles, glass, fertilizer, sugar, heavy chemicals etc. Antwerp is the world's 4th largest port and also the world's biggest diamond-trading centre.

Africa—the Poorest

Thirty-three of the world's 44 poorest countries are in Africa, according to an analysis of the UN Development Programme published in Geneva in June 1990.

According to the analysis, every other citizen of Africa lives on the verge of total poverty and hunger.

The Africans live 51 years on an average, 11 years less than the people of other developing countries.

Only 45 per cent of the Africans are in a position to seek medical help while only 33 per cent drink relatively clean water.

Head of State: King Baudouin. **P.M.:** Dr. Wilfried Martens.

Mission in India: Embassy of Belgium 50-N, Shantipath, Chanakyapuri, New Delhi-110 021. Tel: 608295.

Consulate: 5/1A, Hungerford St., Calcutta-17. Tel: 44-3886.

BELIZE

Cap: Belmopan; **Area:** 22,965 sq km; **Pop:** 179,400; **Lang:** English; **Literacy:** 90%; **Rel:** Christianity; **Currency:** Belize Dollar. $1 = $B 2; **per capita:** $ 1170.

Belize, formerly known as British Honduras, is a Central American republic with the Caribbean Sea to the east, Mexico to the north-west and Guatemala to the south-west. Originally a British colony, it was granted autonomy in 1964 and became independent in 1981. The name Belize was adopted in 1973. The original capital Belize City was laid waste by a hurricane in 1961. The capital was shifted to Belmopan, an inland town, in 1970.

More than half the population is made up of the so-called Creoles or English-speaking Negroes, found mostly in the coastal regions. The indigenous (Red) Indian population consists of Mayans and Kekchis who live mostly in the reservations.

Forest products especially timber form a major export item. Sugar and citrus fruits form the major products. Wild life includes the curious creature mantee-an amphibian mammal—and several varieties of reptiles.

Gov. Gen.: Dame Elmira Minita Gordon. **P.M.:** Manuel Amadeo Esqivel.

BENIN

Cap: Porto Novo; **Area:** 112,622 sq km.; **Pop:** 4,551,000; **Lang:** French and Tribal dialects; **Literacy:** 28%; **Rel:** Tribal and Islam; **Currency:** Franc CFA. $1 = 315 Francs CFA; **per capita:** $ 270.

The People's Republic of Benin (formerly Dahomey) is located North of the Gulf of Guinea in West Africa. It is bounded by Togo, Burkina Faso, Niger and Nigeria.

Formerly, one of the provinces of French West Africa, Benin became an independent state on Aug. 1, 1960. The country has been plagued by coups and counter-coups.

Benin's principal products are palm oil, kernels, peanuts, cotton, coffee and tobacco.

President: Brig.-Gen. Ahmed Mathieu Kerekou.

BERMUDA

Cap: Hamilton; **Area:** 53.3 sq km; **Pop:** 58,080; **Lang:** English; **Rel:** Christianity; **Currency:** Bermuda Dollar. $1 = B$1. **per capita:** $ 18,000.

Bermuda is a group of some 300 coral islands in the Western North-Atlantic. They are said to have been discovered by a Spaniard Juan de Bermudesz in 1650. In 1968 it was given the status of a British Associate state with full internal autonomy.

Negroes make up two-third of the population. Persons of British or Portuguese stock form the rest.

The chief crops are vegetables, flowers, (Easter lilies specially), bananas and citrus fruits. Tourism is the main source of revenue.

Gov. Sir Desmond Langley. **Premier:** John W.D. Swan.

BHUTAN

(See South Asia)

BOLIVIA

Cap: La Paz; **Area:** 1,098,581 sq km; **Pop:** 6,876,000; **Lang:** Spanish; **Literacy:** 28%; **Rel:** Christianity; **Currency:** Peso $1 = Peso 2230; **per capita:** $ 540.

Bolivia, a South American state, lies astride the Andes. Lake Titicaca on the Peru-Bolivian border is the highest lake in the world (3812 m).

Originally part of the ancient Inca Empire, Bolivia became independent in 1825. Bolivia has been named after Simon Bolivar, the famous South American fighter for freedom. Bolivia, like most Latin American states, has had a number of coups and counter-coups.

Agriculture, the mainstay of the country, engages 70 per cent of the people. Tin mining is the most important industry. Bolivia produces about 30,000 tons of tin, nearly 15 per cent of the world's total output. Antimony and tungsten are the next most important minerals.

President: Jaime Paz Zamora.

Mission in India: Consulate of Bolivia, 20, Loudon St., Calcutta-700 016. Tel: 443283.

BOTSWANA

Cap: Gaborone; **Area:** 600,327 sq km; **Pop:** 1,220,000; **Lang:** English and Tswana; **Literacy:** 35%; **Rel:** Tribal and Christianity; **Currency:** Pula. $1 = P 0.40; **per capita:** $ 840.

The Republic of Botswana (formerly known as Bechuanaland) is located in Southern Africa, and is bounded by South Africa in the south and east, Namibia in the west and Zimbabwe in the north east. Botswana became independent in Sept. 1966 and assumed its present name.

Cattle industry is the most important economic activity. Beef is the main export. Diamonds, manganese, asbestos, coal, copper and nickel are leading mineral resources.

President: Dr. Quett Ketumile Joni Masire.

BRAZIL

Cap: Brasilia; **Area:** 8,511,965 sq km; **Pop:** 153,992,000; **Lang:** Portuguese; **Literacy:**

Brunei Sultan Richest

The Sultan of Brunei remains the world's richest man, according to Fortune *magazine.*

However, the list of richest men by Forbes *magazine, which excludes royal families and heads of states from its list on the ground that their fortunes were not based on their economic ability, is headed by Mr. Yoshiaki Tsutsumi, the Japanese land, railway and resorts magnate ($ 16 billion: about Rs. 28,800 crore).*

Forbes *says America has more billionaires than any other country—62 of them in fact. In addition, it says, the US has 37 families with fortunes of over $ 1 billion (about Rs. 2500 crore).*

The two financial magazines never agree on figures. Thus while Forbes estimated Mr. Tsutsumi's net worth at $ 16 billion (Rs. 40,000 crore). Fortune *puts it at $ 3.1 billion (Rs. 7,750 crore).*

Forbes *says a trend it noticed in compiling 1990's list is the number of wealthy Germans. The magazine identified 38 German billionaire families with far more per capita than in Japan or the US.*

World-wide, Forbes *has identified 371 billionaires—individuals or families—much more than the 226 last year.*

While excluding royalty and heads of state because their wealth "derives more from political heritage than from economic effort', the magazine has no hesitation in identifying drug kings who are billionaires.

Among those in its billionaires list are Colombia's Pablo Escobar Gaviria, head of the Medellin cocaine cartel—his net worth is put by the magazine at $ 3 billion (about Rs. 7500 crore)—and Colombia's Ochoa family, whose net worth is about $ 2 billion (about Rs. 5000 crore).

76%; **Rel:** Christianity; **Currency:** New Cruzado (NCz $) US $1 = 0.9995; **per capita:** $ 1740.

Brazil, the largest South American state both in area and population, lies more or less in the centre of South America. The bulk of Brazil lies in the tropics. It is a land of dense forests and mighty rivers. The Amazon and the Sao Francisco cover the north of the country.

More than half of Brazil's population now live in the cities, which are responsible for generating about 35 per cent of the GNP. Among the most important cities are: *Sao Paulo, Rio de Janeiro, Belo Horizonte, Recife, Salvador and Brasilia.* Brasilia, a showpiece of modern architecture and town planning, was declared the capital on April 21, 1960.

Brazil's main industries are concentrated at Sao Paulo—shipbuilding, motor cars, textiles, foodstuffs, metals and chemicals. Brazil is the world's largest producer of coffee, bananas, manioc and sugar cane and the second biggest producer of oranges, maize and cocoa.

The major exports of Brazil are soya beans, sugar, coffee, iron ore, cocoa beans, maize, sisal and tobacco.

Brazil possesses vast deposits of mineral wealth—iron, phosphates, uranium, manganese, copper, coal, platinum and gold. Oil is a state monopoly. The wax which is used for phonograph records and insulation is a monopoly product of the state.

President: Fernado Collor de Mellor.

Mission in India: Embassy of Brazil, N-90, Panchshila Park, New Delhi - 110 017. Tel: 6436791.

BRUNEI

Cap: Bander Seri Begawan; **Area:** 5765 sq km; **Pop:** 200,000; **Lang:** Malay, Chinese; **Literacy:** 95% among the young; **Rel:** Islam; **Currency:** Brunei Dollar, US $1 = B $ 1.93; **per capita:** $ 17000.

Negara Brunei Darussalam on the northern side of the island of Borneo lies between two Malaysian territories, Sabah and Sarawak. Brunei Malays, mostly Muslims, form more than half of the population. The Sultanate, once a powerful and independent kingdom, was annexed by Britain who in 1971 granted it full internal autonomy.

Oil and natural gas are Brunei's most valuable resources. Much of Brunei's oil comes from the the offshore Ampa field. Rice is the chief food crop. Other crops are coconuts, sago and rubber. Rubber is an export item.

Sultan and P.M.: Muda Hassanal Bolkiah Muizzadin Waddaulah.

BULGARIA

Cap: Sofia; **Area:** 110,912 sq km; **Pop:** 9,037,000; **Lang:** Bulgarian; **Literacy:** 95%; **Rel:** Christianity; **Currency:** Lev. $1 = 0.87 leva; **per capita:** $6460.

Bulgaria in south-east Europe was founded in 681 and became a socialist republic on 9 September, 1944.

The country's first free election after four decadess of communist rule was held in September, 1990. An eleven member Corporate Presidency was elected to power.

The principal crops are wheat, rye, barley, maize, sugarbeet, oats, corn, potatoes and tobacco. Coal, iron ore, copper, lead and zinc are the main mineral resources.

President of State Council: Zhelio Zhelev.

Prime Minister: Dimiter Poper.

Mission in India: Embassy of the People's Republic of Bulgaria, E.P. 16/7, Chandragupta Marg, Chanakyapuri, New Delhi - 110 021. Tel: 607411.

BURKINA FASO

Cap: Ouagadougou; **Area:** 274,200 sq km; **Pop:** 7,704,000; **Lang:** French and native languages; **Literacy:** 8%; **Rel:** Tribal and Islam; **Currency:** Franc CFA $1 = Franc CFA 314.72; **per capita:** $ 150.

The Republic of Burkina Faso is a landlocked state in West Africa surrounded by Mali, Niger, Benin, Togo, Ghana and Ivory Coast.

Formerly a province of French West Africa called *Upper Volta,* the country gained full independence in 1960. Name changed to Burkina Faso in 1984.

It is almost exclusively an agricultural country with 80 per cent of the population dependent on agriculture. Livestock raising is highly developed. Principal crops are sorghum, millet, yams, cotton, rice, peanuts and karite. Industry is limited to local handicrafts.

Head of State and Govt: Capt. Blaise Compaore.

Mission in India: Consulate General, 186 Sarat Bose Road, Calcutta - 700 029. Tel: 46-1164.

BURUNDI

Cap: Bujumbura; **Area:** 27,834 sq km; **Pop:** 5,233,000; **Lang:** French and Kirundi; **Literacy:** 30%; **Rel:** Tribal and Christianity; **Currency:** Burundi Franc. $ 1 = BF 156. 19; **per capita:** $ 240.

The Republic of Burundi is a small state in Eastern Africa.

Burundi attained independence on July 1, 1962. Prior to independence, it formed part of the Belgian-administered UN Trust Territory of Rwanda-Urundi.

The population consists of *Hutu* or *Bahutu* tribesmen, *Tutsi* or *Watutsi* people and *Twa* or *Batwa pygmies.* The economy is entirely agricultural, manioc and sweet potato, being the important food crops and coffee the major cash crop.

President: Maj. Pierre Buyoya.

CAMBODIA

Cap: Phnom-Penh; **Area:** 181,035 sq km; **Pop:** 7,900,000; **Lang:** Khmer; **Literacy:** 48%; **Rel:** Theravada Buddhism; **Currency:** Riel. $ 1 = 100 Riels; **per capita:** = $130.

The People's Republic of Kampuchea changed its name to the original one *Cambodia* in May 1989. For some time–between Oct. 1970 and May 1975–the country was also known as Khmer Republic.

Cambodia is an undeveloped country with 50 per cent of its land covered by virgin forests. Rice occupies 80 per cent of the cultivated area. Cattle rearing and fishing are fairly well-developed. The forests are rich in valuable timber. Iron, copper, manganese and gold are also found.

President: Heng Samrin, **P.M.:** Hun Sen.

Mission in India: Embassy of the People's Republic of Cambodia, E 23, Defence Colony, New Delhi-110024. Tel: 693417.

CAMEROON

Cap: Yaounde; **Area:** 475,442 sq km; **Pop:** 10,874,000; **Lang:** French and English; **Literacy:** 65%; **Rel:** Tribal and Christianity; **Currency:** France CFA. $ 1 = FCFA 169.79; **per capita:** $ 910.

Cameroon, originally part of the German colony in West Africa, became a republic in 1960. In 1961, British Cameroon was federated with Cameroon, forming the Federal Republic of Cameroon.

Cameroon has a central government and two provincial governments–East Cameroon and West Cameroon.

Cameroon is mainly an agricultural country raising cocoa, palm oil, coffee, rubber, groundnuts, bananas and cotton. East Cameroon is industrially developed, aluminium and chemicals being the main industries.

President: Paul Biya.

CANADA

Cap: Ottava; **Area:** 9,976,139 sq km; **Pop:** 26,200,000; **Lang:** English & French; **Literacy:** 99% **Rel:** Christianity; **Currency:** Dollar. US $ 1 = Canadian $ 1.19. **per capita:** $ 18,850.

Canada is the second largest country in the world. It occupies all of the northern-most part of N. America except Alaska in the west and the small French islands of St. Pierre & Miquelon. Twenty-seven per cent of the population speak French and the rest English.

Canada is a federation comprising 10 provinces and 2 territories. The federal capital is at Ottawa. It is a member of the Commonwealth. By the historic 'Canada Act of 1982', Britain transferred constitutional powers to Canada.

Provinces	Capital	Area (sq km)
Alberta	Edmonton	644,390
British Columbia	Victoria	929,730
Manitoba	Winnipeg	548,360
New Brunswick	Fredericton	72,090
Newfoundland	St. John's	371,690
Nova Scotia	Halifax	52,840
Ontario	Toronto	891,190
Prince Edward Island	Charlottetown	5,600
Quebec	Quebec	1,356,790
Saskatchewan	Regina	570,700
Territories		
Yukon Territory	Whitehorse	478,970
Northwest Territories	Yellowknife	3,293,020

The provinces with more than a million population are Ontario (8), Quebec (6), British Columbia (2), Alberta and Manitoba (1).

From a primarily agricultural country famous for logging, fishing and fur, Canada has transformed itself into one of the leading industrial countries of the world. Automobile parts head the export list, followed by wood pulp and timber. Wheat is still a major item of export. Canada's industrial structure has been built up mainly by foreign investments especially from USA.

Canada is today the world's largest producer of asbestos, silver, nickel and zinc. It is rich in many other minerals, iron, copper, uranium, cobalt, sulp-hur, lead and gold. It has vast reserves of oil and natural gas. Though Canada is only ninth in the world in crude oil production it is Canada's biggest dollar earning mineral.

Head of State: Queen Elizabeth II. **Gov. Gen.:** Jeanne Sauve. **P.M.** Martin Brian Mulroney.

Mission in India: High Commission of Canada, 7/8 Shantipath, Chanakyapuri, New Delhi-110 021. Tel: 608161.

CEN. AFRICAN REPUBLIC

Cap: Bangui; **Area:** 622,984 sq km; **Pop:** 2,999,000; **Lang:** French and Sangho; **Literacy:** 20%; **Rel:** Christianity and Tribal; **Currency:** Franc CFA $ 1 = Franc CFA 314.72. **per capita:** $290.

The Central African Republic lies in the heart of equatorial Africa. It became self-governing in 1958, and fully independent in 1960, as a member state of the French Community. In 1966 Col. Jean Bedel Bokasa, Chief of Staff of the Army, ousted President David Dacko and seized control of the government.

Bokasa was made President for life in 1972. In 1976, he set himself up an emperor, after the Napoleonic pattern. In 1979 a popular uprising drove out this two-bit Napoleon. Interestingly enough, it was Bokasa's own predecessor in office, viz. David Dacko, who overthrew the self-styled Emperor in a bloodless coup on Sept. 20, 1979.

Principal agricultural products are cotton and coffee. Cotton leads in exports. Diamonds account for half the country's export earnings. Uranium mining is becoming increasingly important.

President and Party Chief: Gen. Andre Kollingba.

CHAD

Cap: N'Djamena; **Area:** 1,284,000 sq km; **Pop:** 5,714,000; **Lang:** French and Arabic; **Literacy:** 17%; **Rel:** Islam and Tribal; **Currency:** Franc CFA. $ 1=Franc CFA 314.72. **per capita:** $ 88.

The Republic of Chad was a province of French Equatorial Africa. It became independent on August 11, 1960.

The country's economy is entirely rural, and based on agriculture and animal husbandry. Cotton and meat are the main exports. Cattle, sheep & camels are raised.

President: Indriss Deby.

CHILE

Cap: Santiago; **Area:** 756,626 sq km; **Pop:** 12,866,000; **Lang:** Spanish; **Literacy:** 90%; **Rel:** Christianity; **Currency:** Peso. $ 1 = Pesos 253.89. **per capita:** $ 1320.

The Republic of Chile lies on the western seaboard of South America, occupying the strip of land between Peru and Bolivia in the north to Cape Horn in the south.

Originally a Spanish colony, Chile became independent on September 18, 1810. It is the first South American country to elect a Marxist Govt. (1970) which fell in a military coup in 1973.

Though wheat and other cereals are cultivated, Chile has to import about one-third of its food. It is the world's largest producer and the largest exporter of copper. There are important deposits of nitrate, gold, silver, lithium, molybdenum and iron ore. Oil production provides about half the oil required by the country. Exports marine products and fruits.

President: Patricio Aylwin.

Mission in India: Embassy of Chile, 1/13 Shantiniketan, New Delhi-110 021. Tel: 671363.

CHINA

Cap: Beijing (Peking); **Area:** 9,561,000 sq km; **Pop:** 1,102,200,000; **Lang:** Chinese (Mandarin); **Literacy:** 70%; **Rel:** Buddhism and Taoism; **Currency:** Yuan. $ 1=Yuan 3.73. **per capita:** $ 355.

The most populous country in the world and the third largest in area, China is made up of 21 provinces, 5 autonomous regions and three municipalities-Beijing, Shanghai and Tientsin.

One of the oldest countries in the world, China became a republic in 1911. The People's Republic of China was proclaimed in Peking on October 1, 1949.

On Oct. 26, 1971 China was admitted a member of the UN displacing Nationalist China (Taiwan).

China is essentially an agricultural country. The main crops are rice, other grains, tea, tobacco, sugarcane, jute, soya, groundnut and hemp. The main forest products are teak and ting oil. Among the principal industries are cotton and woollen mills, iron, leather and electrical equipments. The chief minerals are coal, manganese, iron ore, gold, copper, lead, zinc, silver, tungsten, mercury, antimony and tin. Petroleum industry is steadily growing.

China is a nuclear power well advanced in space technology. It launched its first earth satellite in April, 1970.

Student uprising in 1989 for political reform and liberalisation was put down by the government.

Senior Leader: Deng Xiaoping. **Gen. Secretary of the Communist Party:** Jiang Zemin. **President:** Yang Shangkun; **Premier:**

Li Peng.

Mission in India: Embassy of China, 50-D Shantipath, Chanakyapuri, New Delhi-110 021. Tel: 600328.

COLOMBIA

Cap: Bogota; **Area:** 1,138,400 sq km; **Pop:** 31,821,000; **Lang:** Spanish; **Literacy:** 80%; **Rel:** Christianity; **Currency:** Pesos. $ 1=Pesos 352.02. **per capita:** $ 1129.

The Republic of Colombia, situated in the north west of South America, extends up to the isthmus of Panama. *Bogota,* the capital founded in 1538, is situated in the Andes, 2621 m above sea level.

Colombia was once a part of the South American Spanish Empire. In 1819, Simon Bolivar defeated decisively the Spanish forces breaking the hold of Spain. Bolivar's plan to unite New Granada with Venezuela and Ecuador in the Greater Colombia Confederation was fulfilled by the Congress of Angostura (1819), lasting until 1830.

Colombia's main produce is coffee, which accounts for 61.2 per cent of the country's exports. Other products are bananas, fresh flowers, cotton fibre, sugar, rice, tobacco, maize and wheat. The country is the world's leading producer of emeralds and is a substantial producer of platinum and gold; it holds the largest coal reserves in Latin America, rich nickel deposits and natural gas fields.

Industries include textiles, beverages, food products, chemicals and non-metallic minerals.

President: Cesar Gaviria.

Mission in India: Embassy of Colombia, 82-D, Gr. Fl., Malcha Marg, Chanakyapuri, New Delhi-110 021. Tel: 3012771.

THE COMOROS

Cap: Moroni; **Area:** 2274 sq km; **Pop:** 459,000; **Lang:** Arabic and Comoran; **Literacy:** 15%; **Rel:** Islam and Christianity; **Currency:** Comorian Franc; $ 1=CF 314.72. **per capita:** $ 280.

The Comoro Islands, formerly a French Overseas Territory, lie at the northern end of the Mozambique Channel, between Africa and Madagascar. The archipelago consists of 4 islands—*Grande-Comoroe, Anjouan, Mayotte* and *Moheli*—and a number of islets and coral reefs. The main islands are volcanic and Grande-Comoroe, the largest island, is dominated by Mount Karthala (2361 m), an active volcano. The islands are densely forested.

The population is a mixture of various strains—Arabs, Africans, Malagasys, Persians, Indians, Indonesians and Europeans, African and Arab influences are strongest. A purely European population of around 1500 completes the scene. Grade-Comoroe is the most populous island and has as capital and principal town, *Moroni.* Agriculture is the mainstay of the economy.

President: Ahmed Abdullah Abderemane.

CONGO

Cap: Brazzaville; **Area:** 342,000 sq km; **Pop:** 2,031,000; **Lang:** French and Lingala; **Literacy:** 80%; **Rel:** Tribal and Christianity; **Currency:** Franc CFA. $ 1=Francs CFA 314.72. **per capita:** $ 1040.

Formerly part of the French Equatorial Africa, the Republic of Congo became autonomous within the French Community in 1958 and fully independent in Aug. 1960. In 1969, a new constitution was promulgated.

Main exports are timber, diamonds, palm oil, crude petroleum, sugar and groundnuts.

President: Col. Denis Sassou N'Guesso; **P.M.:** Ange-Edouard Poungui.

COSTA RICA

Cap: San Jose; **Area:** 51,100 sq km; **Pop:** 2,922,000; **Lang:** Spanish; **Literacy:** 90%; **Rel:** Christianity; **Currency:** Colone $ 1=C 80.28. **per capita:** $ 1420.

The Republic of Costa Rica is a Central American state. It lies between Nicaragua and Panama.

For nearly three centuries Costa Rica formed part of the Spanish American dominion. In 1821 it became independent.

The country is mainly agricultural. Coffee is the most important product, accounting for about half the exports. Bananas, cocoa, cattle and, recently, sugar are the other items of export.

President: Oscar Arias Sanchez.

CUBA

Cap: Havana; **Area:** 114,524 sq km; **Pop:** 10,587,000; **Lang:** Spanish; **Literacy:** 96%; **Rel:** Christianity; **Currency:** Peso. $ 1=1.28 pesos. **per capita:** $ 2696.

Cuba, the largest island in the Greater Antilles group is known as the Pearl of Antilles. Its neighbours are USA, Mexico, Jamaica and Haiti. The Bahamas Islands are to the north.

Columbus discovered Cuba in 1492 and Spain ruled it for four centuries. In 1898 Cuba became an independent republic.

In 1959 Dr. Fidel Castro overthrew General Batista, the dictatorial President and took over power.

Cuba is the largest producer of sugar in the world. Tobacco is the second largest crop. Cattle, poultry and fishing have become important in recent years. Cuba is rich in nickel deposits.Copper, chromite and manganese are also found.

President: Dr. Fidel Castro Ruz. **First Vice President:** Raul Castro Ruz.

Mission in India: Embassy of the Republic of Cuba, D-5, South N.D.S.E., Part II, New Delhi-110 049. Tel: 669162.

CYPRUS

Cap: Nicosia; **Area:** 9,251 sq km; **Pop:** 696,000 (82% Greeks and 18% Turks); **Lang:** Greek and Turkish; **Literacy:** 99%; **Rel:** Christianity and Islam; **Currency:** Cyprus Pound $ 1=£C 0.4816. **per capita:** $ 6831.

The Republic of Cyprus lies in the North Eastern corner of the East Mediterranean basin, at the meeting point of three continents—Europe, Asia and Africa. Cyprus appeared for the first time in the history of civilization in the 7th millennium B.C. Cyprus became independent in 1960. In 1974 it was invaded by Turkey and nearly 40% of its territory is still under Turkish occupation.

The healthy climate and the natural beauty of the island make it an ideal place for the tourists.

Cyprus is mainly an agricultural island. Main agricultural exports are: potatoes, wine products, carrots, fresh vegetables, citrus. Main industrial exports are: readymade clothing, footwear, cement, travel goods, plastic products, water pumps, furniture, cosmetics, etc. Other main exports are minerals, the importance of which has been diminishing over the last few years.

President: George Vassiliou.

Mission in India: High Commission of the Republic of Cyprus, 52, Jor Bagh, New Delhi-110 003. Tel: 697503.

Consulate: Bombay-14, K. Dubash Marg, Bombay-400 023. Tel: 244294.

Turkish Cyprus

***Area:** 3355 sq km;* ***Pop:** 162,676;* ***Currency:** Turkish Lire.*

The Turkish controlled area of northern Cyprus unilaterally declared independence in 1983. It has been named 'Turkish Republic of Northern Cyprus.'

The Republic is not internationally recognised although it does have trade relation with some countries. A 50- strong Parliament was elected in June 1985.

The centre-right and left-of-centre Cypriot coalition Government headed by the Prime Minister Dervis Eroglu, *was officially installed in power in July 1985.*

***President:** Rauf R. Denkash;* ***P.M.:** Dervis Eroglu.*

CZECHOSLOVAKIA

Cap: Prague; **Area:** 127,877 sq km; **Pop:** 15,661,000; **Lang:** Czech and Slovak; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Koruna (KCs). $ 1 = 9.69 Kcs. **per capita:** $ 8700.

A republic landlocked in Central Europe, Czechoslovakia is composed of two main population groups, Czechs and Slovaks.

The Czechoslovak Socialist Republic was established in Jan. 1969 as a federal state of two nations of equal rights—the Czechs and the Slovaks. The Czechs and the Slovaks form two republics within the federation, each with its own government. In 1990 the country changed its name to the Czech and Slovac Federative Republic and dropped 'socialist' to symbolize its departure from the communist past.

The first democratically elected government after 42 years of communist rule also came to power in 1990. Alexander Dubcek, leader of the abortive reform attempt of 1968 known as the 'Prague Spring' was elected speaker of the Parliament.

Czechoslovakia is a highly industrialised country. Principal exports are machinery and equipment, chemicals and fuels, glass and other manufactured goods. Wheat, barley, potatoes and sugar beet are among the important crops.

President: Vaclav Havel. **P.M.:** Marian Calfa.

Mission in India: Embassy of Czechoslovakia, 50-M Niti Marg, Chanakyapuri, New Delhi-110021. Tel: 608382.

Consulates: 'Marcopia', 5, Deshmukh Marg, Bombay and 24 B, Park Street, Calcutta-700 016. Tel: 24-8661.

DENMARK

Cap: Copenhagen; **Area:** 43,074 sq km; **Pop:** 5,074,000; **Lang:** Danish; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Krone. $ 1= Krone 7.22; **per capita:** $ 12,640.

Denmark is situated in northern Europe between the North Sea and the Baltic Sea. It comprises the peninsula of Jutland, the Islands of Zealand, Funen and Bornholm and 480 smaller islands. Greenland and the Faroe Islands also form part of the Kingdom of Denmark.

Denmark is a constitutional monarchy, the Queen and the Parliament (Folketing) jointly holding legislative powers.

About 70 per cent of the land is under cultivation. Denmark is one of the largest exporters of dairy products. Finishing forms an important occupation. Denmark is famous for its co-operative institutions. The first co-operative society was established in 1866. Shipbuilding, machinery of different types, textiles, iron and steel-ware account for a major portion of industry.

Head of State: Queen Margarethe II. **P.M.:** Poul Schluter.

Mission in India: Royal Danish Embassy, 2, Golf Links, New Delhi-110 003. Tel: 616273.

Consulates: Bombay-L & T House, Narotham Morarjee Marg, Ballard Estate, Bombay.

Madras: 8, Cathedral Road, Madras-600 086.

Calcutta: McLeod House, 3, Netaji Subhas Road, Calcutta-700 001. Tel: 23-0484.

DJIBOUTI

Cap: Djibouti; **Area:** 21,783 sq km; **Pop:** 327,000; **Lang:** Somali and French; **Literacy:** 17%; **Rel:** Islam; **Currency:** Djibouti Franc, $1 = DF 174; **per capita:** $ 760.

Djibouti, first known as French Somaliland and then as the French Territory of Afars and Issas, became independent on June 26, 1977 under the name of Djibouti.

Lying between Ethiopia and Somalia and looking out on the Red sea and the Gulf of Aden, the state is of extreme strategic importance.

The land is economically poor, being mostly volcanic desert. The indigenous population is mostly Muslim. Agriculture is possible only in restricted areas with irrigation facilities. Goats, sheep and camels form the major wealth of the state. Salt is a major product with huge salt deposits in the lakes of Alol and Assal. Trade is almost entirely based in the capital Djibouti.

President: Hassan Gouled Aptidon, **P.M.:** Barkat Gourad Hamadore.

DOMINICA

Cap: Roseau; **Area:** 750 sq km; **Pop:** 76,000; **Lang:** English and French Patois; **Literacy:** 80%; **Rel:** Christianity; **Currency:** East Caribbean Dollar $1 = EC$ 2.71; **per capita:** $ 1210.

Commonwealth of Dominica lies in the Lesser Antilles. Once a British protectorate, it assumed the status of a British Associate State in 1967 and became fully independent in 1978.

The island is volcanic in origin and largely mountainous. The population includes Negroes, Mulattoes, Carib Indians and Europeans.

Exports include bananas, cocoa, copra and fruits.

President: C.A. Seignoret; **P.M.:** Mary Eugenia Charles.

DOMINICAN REPUBLIC

Cap: Santo Domingo; **Area:** 48,422 sq km; **Pop:** 7,037,000; **Lang:** Spanish; **Literacy:** 68%; **Rel:** Christianity; **Currency:** Peso Oro. $1 = RD $ 6.38; **per capita:** $ 710.

The Dominican Republic occupies the eastern two-thirds of Hispaniola, the second largest island of the Greater Antilles. Originally under Spain, the Dominican Republic became independent in 1844.

The state is predominantly agricultural. The most important crops are sugarcane and coffee.

President: Dr. Joaquin Balaguer.

ECUADOR

Cap: Quito; **Area:** 283,561 sq km; **Pop:** 10,490,000; **Lang:** Spanish and tribal dialects; **Literacy:** 90%; **Rel:** Christianity; **Currency:** Sucre. $1 = Sucre 433.63; **per capita:** $ 1160.

Ecuador lies on the west coast of South America. Two ranges of the Andes cross the country from north to south, dividing it into three natural regions, coastal, highlands and the orient. *Guayaquil* is the chief seaport and airport. The *Galapagos* islands belong to Ecuador. Ecuador, a part of the great Inca Empire, came under Spanish rule in 1533. It became independent in 1830.

Ecuador is the world's largest producer of bananas. Sugarcane, African palm and rice are grown. Silver ore is now the chief mineral product. There are large deposits of copper, gold and zinc. The production of petroleum is increasing. The so-called "Panama' hats made of Toquilla straw are made in Ecuador.

President: Dr. Rodrigo Borja.

Mission in India closed in 1985. The embassy in Cairo looks after interests in India.

EGYPT

Cap: Cairo; **Area:** 997,677 sq km; **Pop:** 54,779,000; **Lang:** Arabic: **Literacy:** 44%; **Rel:** Islam and Christianity; **Currency:** Pound. $1 = £E 2.41; **per capita:** $ 760.

Egypt, traditionally known as the Gift of the Nile, occupies north east Africa.

Egypt has one of the oldest civilizations in the world, its recorded history going back to more than 5000 B.C. In 1922 Egypt became an independent monarchy and in 1952 a republic.

The main agricultural area is Lower Egypt which covers the delta of the Nile. The chief crops are cotton, onions, wheat, maize, millet, rice, sugarcane and fruits of various kinds.

Principal exports are cotton, rice, mineral products, textiles, refrigerators, tyres, cement and electrical instruments.

President: Hosni Mubarak. **P.M.:** Dr. Atef Mohamed Naguib Sedki.

Mission in India: Embassy of the Arab Republic of Egypt, Sunder Nagar, New Delhi - 110 003. Tel: 619081.

Consulate: Bombay, Maker Tower, 'B' Flat No. 41/B.

EL SALVADOR

Cap: San Salvador; **Area:** 21,393 sq km; **Pop:** 5,548,000; **Lang:** Spanish; **Literacy:** 62%; **Rel:** Christianity; **Currency:** Colon. $1 = C 5.01; **per capita:** $ 820.

El Salvador in Central America became independent in 1821.

The country is predominantly agricultural. The principal crop is coffee which provides half the exports. Other products are cotton, maize and sugar. Fisheries are being developed and figure prominently in the export list. Industry is growing.

President: Alfredo Cristiani.

EQUATORIAL GUINEA

Cap: Malabo (formerly Santa Isabel); **Area:** 28,051 sq km; **Pop:** 389,000; **Lang:** Spanish and Fang; **Literacy:** 55%; **Rel:** Christianity; **Currency:** Franc CFA; $1 = Francs 314.72; **per capita:** $ 420.

Equatorial Guniea, formerly Spanish Guinea, comprises the islands of *Fernando Po, Corcisco, Great Elobey, Little Elobey, and Annoban* and the mainland territory of *Rio Muni* on the west coast of Africa. In 1975, almost all place names were changed by President Macias Nguema. The capital Santa Isabel thus became Malabo.

Francisco Macias Nguema was ousted by his nephew, Mbasogo on Sept. 29, 1979. The island of Fernando Po is mostly mountainous. Coffee is cultivated upto 900 m and cocoa upto 600 m. There are also forests of ebony, mahogany and oak. Other products are cocoa, coffee, timber, palm oil and bananas.

President: Col Teodoro Obiang Nguema

Mbasogo. **P.M.:** Capt. Christino Seriche Bioko Malabo.

ETHIOPIA

Cap: Addis Ababa; **Area:** 1,221,900 sq km; **Pop:** 47,709,000; **Lang:** Amharic (official language); **Literacy:** 50%; **Rel:** Christianity and Islam; **Currency:** Birr $1 = Birr 2.06; **per capita:** $120.

Ethiopia is a mountainous country in North East Africa, having access to the Red Sea, through the province of Eritrea, which was federated with Ethiopia in 1952 and later was united with Ethiopia.

Ethiopia is one of the most ancient countries of the world, with a colorful history. The Ethiopian emperors claimed descent from Solomon and the famous Queen of Sheba. The last Emperor of Ethiopia Haile Sellasie I was deposed by the marxist armed forces which took over the govt. in 1974. Opposition to this government mounted in 1991 and in the month of May, Ethiopian leader Mengistu Haile Mariam had to flee the country. A new government consisting of various groups was formed by the Ethiopian Revolutionary Democratic Front.

The economy is mainly agricultural and pastoral. Coffee export earned 60% of all revenue in 1977.

President: Meles Zenawi. **P.M.:** Tamirat Layene.

Mission in India: Embassy of Ethiopia, 7/50-G, Satya Marg, Chanakyapuri, New Delhi - 110 021. Tel: 692311.

FIJI

Cap: Suva; **Area:** 18,376 sq km; **Pop:** 758,000; **Lang:** English and Figian; **Literacy:** 80%; **Rel:** Christianity and Hinduism; **Currency:** Dollar. $1 = $F1.44; **per capita:** $ 1862.

Fiji consists of about 800 islands, lying 1750 km. north of New Zealand. The largest of the islands *Viti Levu* constituting more than half of the total land area of Figi islands is the seat of the government. Fiji lies on the main route between Australia, New Zealand and North America and is the centre of communications in the South West Pacific.

These islands came under British rule in 1874. From 1879, indentured Indian labour was imported into the islands to work on European sugar plantations. Practically all the Indian workers settled permanently in the islands. Their descendants now form 50 per cent of the population. Melanesians, the original inhabitants, make up 43 per cent, the rest being made up of Europeans, Chinese and others. On Oct. 10, 1970 Britain granted independence to Fiji.

Fiji is a famous tourist centre. Its major products are agricultural. Sugar and coconuts form 90 per cent of the total exports. Mining is limited and industries are few.

In October 1987 military strongman Col. Sitiveni Rabuka declared Fiji a republic defying popularly elected government headed by Dr. Thimoci Bavadra, leader of the majority Indian ethnic group.

President: Ratu Sir Penaia Ganilau. **P.M.:** Ratu Sir Kamisese Mara.

FINLAND

Cap: Helsinki; **Area:** 337,032 sq.km.; **Pop:** 4,990,000; **Lang:** Finnish and Swedish; **Literacy:** 90%; **Rel:** Christianity; **Currency:** Mark. $1 = Marks 4.32; **per capita:** $ 18118.

The Republic of Finland is a Baltic State, which once formed part of the Russian Empire. It became an independent republic in 1917.

Finland's economy is based on conifer forests which cover 65 per cent of the land. Paper and pulp industry is highly developed. Other industries are shipbuilding, metals, textiles, leather and chemicals. Finland has a fairly big fleet of merchant marine with a gross tonnage of 1,649,687 tonnes (1985).

President: Mauno Koivisto. **P.M.:** Harri Holkeri.

Mission in India: Embassy of Finland, Nyaya Marg, Chanakyapuri, New Delhi - 110 021. Tel: 605409.

Consulates: Bombay-Bennet, Coleman & Co., Dr. D.N. Road.

Calcutta: Calland House, 6th Floor, Chitrakoot, 230 A, Acharya Jagdish Chandra Road, Calcutta - 700 020. Tel: 44-4757.

Madras: C/o Travancore Rayons Ltd., 762 Mount Road, P.O. Box 2730, Madras - 600 002.

FRANCE

Cap: Paris; **Area:** 551,695 sq km; **Pop:** 55,813,000; **Lang:** French; **Literacy:** 99%;

GHANA

Cap: Accra; **Area:** 238,537 sq km; **Pop:** 14,786,000; **Lang:** English (official language) and eight major national languages; **Literacy:** 30%; **Rel:** Christianity and Islam; **Currency:** Cedi, $1=C261.66. **per capita:** $ 390.

Ghana is composed of the former British colony Gold Coast and the British-ruled Togoland in Western Africa.

Ghana got independence on 6th March 1957 and became an independent republic within the Commonwealth on July 1, 1960.

Ghana is primarily an agricultural country and produces the best quality cocoa which constitutes a major export item. Other cash crops include kolanuts, palm products, bananas, coffee, shea-nuts and rubber. It also exports timber, gold, diamonds, manganese and bauxite.

Provisional National Defence Council Chairman: Flt. Lt. Jery John Rawlings.

Mission in India: High Commission of Ghana, A-42, Vasant Marg, Vasant Vihar, New Delhi-110 057. Tel: 670788.

GREECE

Cap: Athens; **Area:** 131,990 sq km; **Pop:** 10,048,000; **Lang:** Modern Greek; **Literacy: 92.5%; Rel:** Christianity; **Currency:** Drachma, $1= 155.78 Dr. **per capita:** $ 4710.

Greece or the Hellenic Republic occupies the southern part of the Balkan peninsula in the Mediterranean with the Ionian Sea on the west and the Aegean Sea on the east.

In ancient times, Greece was the seat of democracy, learning and culture. Politically independent till the first century B.C., the Greek states succumbed to Roman might in the latter half of the first century B.C. Later they came under the Byzantine and Ottoman empires in succession until 1830 when Greece regained its freedom as a monarchic state. After many vicissitudes of fortune monarchy was abolished in Greece in 1974. It is a republic since.

Greece though till recently an agricultural country has now developed many industrial branches. In merchant shipping, Greece owns a surprisingly big tonnage. Tourism is Greece's biggest industry.

President: Christos Sartzetakis. **P.M.:** Xenofontas Zolotas.

Mission in India: Embassy of Greece, 16 Sunder Nagar, New Delhi-110 003. Tel: 617800.

Consulate General: C/o. Stewarts and Lloyds of India Ltd., 41 Chowringhee Road, Calcutta-700 071. Tel: 24-8194.

Hon. Consul: Chordia Mansion, 739 Annasalai, Madras-600 002. Tel: 811566.

GRENADA

Cap: St. George's; **Area:** 344 sq km; **Pop:** 87,000' **Lang:** English and French-African patois; **Literacy: 95%; Rel:** Christianity; **Currency:** Eastern Caribbean Dollar. $1=EC $2.71. **per capita:** $ 1240.

Grenada is the southernmost of British Windward Islands and includes *Southern Grenadines* (islands), the largest of which is *Carriacou*. It is a heavily wooded country with mountains of volcanic origin stretching from north to south. Grenada became independent in 1974.

The population is of mixed origin: European, Negro and Carib Indians.

Tourism is a growing industry but agriculture dominates the economy. The chief exports are cocoa, nutmegs and bananas. Other crops include coconuts, citrus fruits, sugar cane, cotton and spices.

Gov. Gen. Sir Paul Scoon **PM:** Nicholas Brathwaite.

GUATEMALA

Cap: Guatemala City; **Area:** 101,889 sq km; **Pop:** 9,412,000; **Lang:** Spanish (official) and Indian dialects; **Literacy: 48%; Rel:** Christianity; **Currency:** Quetzal $1=Q2.75. **per capita:** $ 930.

Guatemala, a republic, is the third largest of the five central American states and has the largest population. Fifty per cent of the population is of Indian (Red) extraction, 45 per cent Ladino or of mixed European and Indian parentage. The Indians are the descendants of the builders of the great Maya civilization which was wiped out by the Spanish conquisitadors.

After remaining as a Spanish colony for about three centuries, Guatemala became a republic in 1939. Guatemala's claims to British Honduras (Belize) led to the rupture of diplomatic relations with Britain in 1963.

The soil is very fertile. Agriculture is the most important occupation. The principal crop is coffee. Other important export items are bananas, cotton, gum, sugar, maize, tobacco, fruits and beef.

President: Marco Vinicio Cerezo Arevalo.

GUINEA

Cap: Conakry; **Area:** 245,857 sq km; **Pop:** 6,147,000; **Lang:** French and 8 national languages; **Literacy: 48%; Rel:** Islam and Tribal; **Currency:** Guinea franc. $1=310.22 franc. **per capita:** $ 310.22.

Guinea is a former French overseas territory in West Africa.

Under the constitution of the Fifth (French) Republic, Guinea voted for secession and proclaimed itself an independent republic on October 2,1958.

It exports coffee, honey, bananas, palm kernels, iron and aluminium ore. Guinea has probably the world's largest deposit of bauxite.

President: Brig. Gen. Lansana Konte.

GUINEA-BISSAU

Cap: Bissau; **Area:** 36,125 sq km; **Pop:** 929,000; **Lang:** Crioulo (Cape Verde-Guinea dialect) and Portuguese; **Literacy: 15%; Rel:** Islam, Christianity and Tribal; **Currency:** Peso. $1=652.64 Pesos. **per capita:** $ 170.

Guinea-Bissau, formerly Portuguese Guinea, is stuck like a wedge between Senegal in the north and Guinea to the east and south. The Atlantic sea borders it on the west. The land is part plain and part plateau.

The main occupation is agriculture. Swamp rice (grown in the coastal plains), coconuts, cassava, sweet potatoes and maize form the important food crops. The cash crops are groundnuts, coconuts and palm oil. Cattle raising is widespread.

Guinea-Bissau unilaterally declared independence in 1973. Portugal recognised its independence in 1974.

President: Gew Joao Barnardo Vieira.

GUYANA

Cap: Georgetown; **Area:** 214,969 sq km; **Pop:** 779,000; **Lang:** English; **Literacy: 86%; Rel:** Christianity, Hinduism and Islam; **Currency:** Guyana Dollar. $1=9.03 G$. **per capita:** $ 500.

Guyana (former British Guiana) lies on the north east coast of South America.

Guyana became a British possession in 1814 and an independent sovereign state within the Commonwealth of Nations on May 26, 1966.

The economy is based on agriculture. Sugar, rice and bauxite are the main exports. There are considerable deposits of gold and diamonds. Dense tropical forests cover much of the land.

President: H. Desmond Hoyte; **P.M.:** Hamilton Greene.

Mission in India: High Commission of Guyana, 85 Poorvi Marg, Vasant Vihar, New Delhi-110 057. Tel: 674194/5.

HAITI

Cap: Port-au-Prince; **Area:** 27,750 sq km; **Pop:** 6,216,000; **Lang:** French (official), a Creole dialect is generally spoken; **Literacy: 23%; Rel:** Christianity and Voodoo; **Currency:** Gourde. $1=5 Gourdes; **per capita:** $ 330.

Haiti is part of the West Indies known as Hispaniola in the Atlantic lying between Cuba on the west and Puerto Rico on the east. Negroes form the majority of the population, the rest being mulattoes, descended from former French settlers and slaves. The French colony proclaimed itself an independent republic in 1804.

Coffee is the chief agricultural product, others being sisal, cotton, raw sugar, cocoa and tobacco. Rice is grown for home consumption. Rum and other spirits are distilled from molasses and exported. Bauxite is the chief mineral exported. Tourism is Haiti's second largest source of foreign exchange.

President: Jean Bertraud Aristide; **P.M.:** Rene Preval.

Mission in India: Consulate of Haiti, 186 Sarat Bose Road, Calcutta-700 029. Tel: 46-1164.

HONDURAS

Cap: Tegucigalpa, D.C.; **Area:** 112,088 sq km; **Pop:** 5,106,000; **Lang:** Spanish; **Literacy: 56%; Rel:** Christianity; **Currency:** Lempira also known as Peso. $1=2 Lempiras. **per capita:** $ 740.

Honduras is a republic of Central America lying between Nicaragua, El Salvador and Guatemala. It has a long northern coastline on the Caribbean and a narrow southern outlet to the Pacific.

Originally a Spanish colony, Honduras became independent in 1821. The country has gone through a series of dictatorships, military juntas, coups and counter-coups.

The chief crop is bananas which constitute 65 per cent of the country's exports. Coffee, cotton, maize and tobacco are also grown. Timber is abundant and cattle raising is a major occupation.

President: Jose Azcona Hoyo.

HONG KONG

Cap: Victoria; **Area:** 1051.7 sq km; **Pop:** 5,800,000; **Lang:** English and Cantonese; **Rel:** Confucianism and Buddhism; **Currency:** Hongkong Dollar. $1=HK$ 7.81. **per capita:** $ 9643.

Lying along the south east coast of China, at the mouth of the Canton river, Hong Kong comprises Hong kong island, Kowloon Peninsula, the New Territories and over 230 small islands. Hong Kong has been a British colony since 1843. The New Territories were acquired by Britain in 1898 by lease for 99 years. According to an agreement signed on 19 Dec. 1984, China would recover sovereignty over Hong Kong from 1 July 1997 and establish it as a Special Administrative Region.

The population is almost entirely Chinese with a sprinkling of other nationalities.

Hong Kong is one of the world's greatest transhipment ports. It specialises in light industries-cotton textile, plastics, electronic, photographic and optical equipments.

Gov. Gen: Sir David Wilson.

HUNGARY

Cap: Budapest; **Area:** 93,033 sq km; **Pop:** 10,571,000; **Lang:** Hungarian-Magyar; **Literacy: 98%; Rel:** Christianity; **Currency:** Forint. $1=53.74 Forints. **per capita:** $ 2010.

Hungary in Central Europe embraced democracy and market economy in 1990. The eastern half of Hungary is mainly a great fertile plain, 'the Great Plain'. The west and the north are hilly.

Hungary had a stormy history being successively overrun by Huns, Magyars, Turks, Hungarians and Austrians. Hungary became an independent republic in 1918 and the Hungarian Socialist Republic in 1919.

Although an agricultural country in the past, since the Second World War industry has come to account for more than half of its total economy. Hungary exports engineering products, machine tools, motor vehicles and electrical and electronic goods. Chief imports are iron ore, coal, crude oil and consumer goods. More than 97 per cent of agricultural land is collectivised. Vineyards occupy around 186,000 hectares.

President: Arpad Goenez; **Prime Minister:** Jozsef Antall.

Mission in India: Embassy of Hungary, 2/50, Niti Marg, Chanakyapuri, New Delhi-110 021. Tel: 371152.

ICELAND

Cap: Reykjavik; **Area:** 102,846 sq km; **Pop:** 251,000; **Lang:** Icelandic; **Literacy: 99%; Rel:** Christianity; **Currency:** Krona $1=Kr. 52.50. **per capita:** $15,252.

Iceland is an island close to the Arctic Circle in the North Atlantic. The Norwegian Sea is on the eastern side of Iceland. The warm Gulf Stream makes the winters mild.

During the short cool summers, there is perpetual daylight for many weeks, making it an *island of the Midnight Sun*. The island has many geysers and hot springs. Natural hot water from Iceland's hot springs is pumped into towns, providing heat for offices and residences. Iceland has over 200 volcanoes, many of them still active.

The people of Iceland are the descendants of the dare-devil Vikings of Norway, the first of whom settled in Iceland in A.D. 874 and who are reputed to have first discovered Greenland (A.D. 982) and North America (A.D. 1000). After having been independent till the 13th century it became part of Norway, and then passed under Danish rule. In 1941 the Althing (Parliament) voted for complete independence and a republic was formed on June 17, 1944.

Much of the land in Iceland is uncultivated. Potatoes and turnips are the major crops. Fishing industry is highly developed.

President: Vigdis Finnbogadttir. **P.M.:** Steingrimur Hermanhnsson.

Mission in India: Embassy of Iceland, D-35, Pamposh Enclave, New Delhi.

Consulates: 38 Western India House, Sir P.M. Road, Bombay-400 038; Tel: 251931.

3-1, Sivaganga Road, Madras; Tel: 477946, 478803.

INDIA

(See Part III)

INDONESIA

Cap: Jakarta; **Area:** 1,904,569 sq km; **Pop:** 178,000,000; **Lang:** Bahasa Indonesian; **Literacy: 72%; Rel:** Islam; **Currency:** Rupiah. $1=1,752 Rupiahs. **per capita:** $ 520.

Indonesia is an archipelago state consisting of over 13,000 (6000 inhabited) islands. The five main islands are Java, Sumatra, Kalimantan (Indonesian Borneo), Sulavesi and Irian Jaya (West New Guinea) with 30 smaller archipelagoes. The capital is Jakarta, the former city of Batavia, on the island of Java. The country is divided into 27 provinces.

The Japanese army occupied Indonesia from 1942 after the surrender of the Dutch army till 1945. The Indonesian people proclaimed their independence on August 17, 1945. After a war of independence, the Netherlands transferred sovereignty to Indonesia on December 27, 1949.

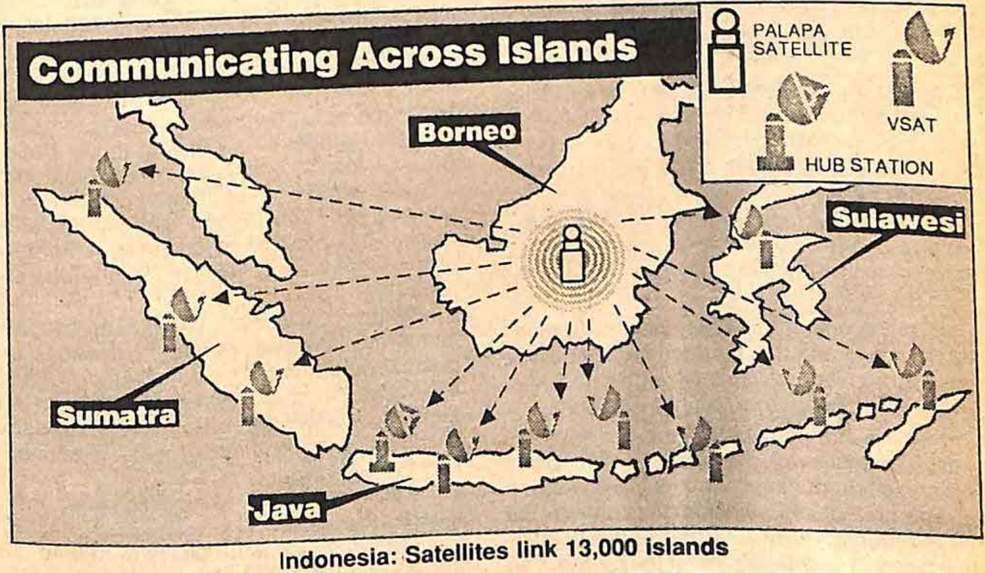
One of the world's richest countries in natural resources, Indonesia has vast supplies of tin, oil and fairly big deposits of bauxite, copper, nickel, gold and silver. Agriculture is the main occupation of the people. Crops include rice, tobacco, coffee, rubber, pepper, kapok, coconut, palm oil, tea and sugarcane. Forest products are a major source of foreign exchange.

President and P.M.: Gen. Raden Suharto.

Mission in India: Embassy of Indonesia, 50-A, Chanakyapuri, New Delhi- 110 021. Tel: 602352.

Consulates: 19 Altamount Road, Cumballa Itills, Bombay; Tel: 368678, 381051.

Rajkamal Bhavan, 128 Rashbehari Ave, Calcutta-700 029. Tel: 46-0297, 462277.



Indonesia: Satellites link 13,000 islands

IRAN

Cap: Teheran; **Area:** 1,648,000 sq km; **Pop:** 51,005,000; **Lang:** Persian (Farsi); **Literacy: 48%; Rel:** Islam; **Currency:** Rial. $1=70.16 Rials. **per capita:** $ 1690.

Iran (Persia) is a country of great antiquity, celebrated alike for its culture and military valour.

The last of the Pahlavi dynasty, Mohammed Reza, was forced to flee Iran in face of nation-wide revolt against him. In Feb. 1979 Ayatollah Khomeini, a high priest of Islam, returned to Iran to guide its destiny.

Agriculture is the major occupation of the people. The chief agricultural products are wheat, barley, rice, fruits, wool and sugar beets. Sturgeon fish (from which caviar is obtained) in Caspian Sea provides an important source of income. Iran is one of the biggest oil-producing regions in the Middle East. Emeralds and other gems are found in Khorassan and Kerman. Persian carpets, made on handlooms are famous.

President: Ali Akbar Hashemi Rafsanjani.

Mission in India: Embassy of the Islamic Republic of Iran, 5, Barakhamba Road, New Delhi-110 001. Tel: 385491.

Consulate: 4-47, Swapna Lok, Jamna Dass Road, Bombay, Tel: 8224102, 8220073.

IRAQ

Cap: Baghdad; **Area:** 438,446 sq km; **Pop:** 17,610,000; **Lang:** Arabic (official) and Kurdish; **Literacy: 70%; Rel:** Islam; **Currency:** Iraqi Dinar. $1=0.310 Dinar: **per capita:** =$ 2140.

Iraq is the modern name for Mesopotamia (Meso-middle, Potamia-rivers), the land lying between the two great rivers, Euphrates and Tigris.

Iraq is one of the most ancient countries of the world and has produced a culture–the Mesopotamian Civilization – which has influenced European and Asian civilizations.

Petroleum is the most important sector of the economy. Iraq occupies the fifth place among oil-producing countries of the world. A programme of industrialisation is on with the oil revenues. Three quarters of the population depend on agriculture for their living. Iraq is the world's largest exporter of dates.

President: Sadam Hussein Takriti.

Mission in India: Embassy of Iraq, 169/170/171, Jor Bagh, New Delhi-110 003. Tel: 618011.

Consulate General: Panorama 203, Walkeshwar Road, Bombay-400 006. Tel: 8124117, 8281304.

IRELAND

Cap: Dublin; **Area:** 70,282 sq km; **Pop:** 3,734,000; **Lang:** Irish and English; **Literacy: 99%; Rel:** Christianity; **Currency:** Irish Pound. $1=IR£ 0.70. **per capita:** =$ 5080.

Ireland or Eire, the Emerald Isle, is an island in the N. Atlantic lying west of Great Britain.

The independent state of Ireland consists of only 26 countries out of the 32 that make up the whole island. The 6 remaining countries form the area known as Northern Ireland which is directly administered by the United Kingdom.

Ireland emerges into history with the coming of St. Patrick in 432 A.D. and the spread of Christianity. An invasion led by Norman barons during the 12th century led to a period of almost eight centuries of British rule in Ireland. In 1921 Great Britian recognised Ireland as a more or less independent unit within the Commonwealth and the country became known as the Irish Free State. In 1932 the Fianna Fail party under Eamon de Valera came to power and gradually removed the last vestiges of allegiance to the British Crown. In 1937 a new constitution was adopted which made Ireland effectively a republic. In 1949 Ireland formally declared itself a Republic and ceased to be a member of the Commonwealth. In 1973 the country joined the EEC.

Ireland had formerly a mainly agricultural economy. However, in recent decades industrial output has expanded rapidly due to increased foreign investment. Exports make up 50% of GNP, the main items being dairy products, food and beverages, machinery and live animals.

President: Mrs. Mary Robinson; **P.M:** Charles Haughey.

Mission in India: Embassy of Ireland, 13 Jor Bagh, New Delhi-110 003. Tel: 617435.

Consulate: Royal Bombay Yacht Club Chambers, Apollo Bunder, Bombay-400 039. Tel: 2024415.

ISRAEL

Cap: Jerusalem; **Area:** 20,325 sq km; **Pop:** 4,477,000; **Lang:** Hebrew (official) and Arabic; **Literacy:** 88% (Jewish); 70% (Arab); **Rel:** Judaism; **Currency:** New Shekel. $1 = 1.81 Shekel. **per capita:** $ 6050.

A Republic in the Middle East (West Asia), Israel is surrounded on three sides by Arab countries.

The Republic occupies a minor portion of the ancient Palestine.

On November 29, 1947, the UN partitioned Palestine between the Jews and the Arabs. A new Zionist state called Israel was proclaimed in the Jewish area of Palestine on May 15, 1948.

Israel has developed both agriculture and industry in the little land allotted to it with considerable expertise and efficiency. They have literally made the deserts bloom. Kibbutzim (collective cultivation), irrigation schemes and reclamation of desert-land formed the main feature of agricultural development. Citrus fruits are the main exports. Wine-making is an extensive industry. In diamond-cutting, Israel comes next only to Belgium. The Valley of Jordan and the Dead Sea yield rock salt, sulphur and potash.

President: Chaim Herzog. **P.M.:** Yitzhak Shamir.

Mission in India: Consulate General of Israel, 50G, Deshmukh Marg, Bombay - 400026. Tel: 362793.

Consulate of Israel, Kailash, Peddar Road, Bombay - 400026. Tel: 362795.

ITALY

Cap: Rome; **Area:** 301,253 sq. km.; **Pop:** 57,439,000; **Lang:** Italian; **Literacy: 97%; Rel:** Christianity; **Currency:** Lira $1=1361 Lira; **per capita:** $ 8570.

The Italian Republic occupies the long peninsular area in Europe extending from the Alps into the Mediterranean Sea. The islands of Sicily, Sarinia, Elba and Capri in the Mediterranean belong to Itally.

Italy, once the headquarters of the great Roman Empire, disintegrated into many petty states during the latter Middle Ages. Modern Italy began to develop when King Victor Emmanuel II of Savioa became king.

The Vatican was recognised as an independent state on February 11, 1929. On April 28, 1945 Mussolini, the Fascist dictator, was put to death. Consequent on a referendum on June 2, 1946, Italy voted for a Republic. The king laid down his kingship.

Since World War II, Italy has revolutionised agricultural production. The chief crops are grapes, wheat, sugarbeet, fruits and vegetables. Italy is among the highly industrialised countries of the world. Its main products are electrical, mechanical and electronic gadgets, automobiles and chemicals. Italy has a big merchant marine fleet with a gross tonnage of over 11 million, and air fleet with the capacity of over 12 billion passengers/km and over 1 billion tons/km.

President: Francesco Cossiga, **P.M.:** Giulio Andreotti.

Mission in India: Embassy of Italy, 13, Golf Links, New Delhi-110 003. Tel: 618311.

Consulate General: Vaswani Mansion, 120, Dinsha Wachha Road, Bombay-400 020; Tel: 2874777.

Consulate General: 3, Raja Santosh Road, Calcutta-700 027. Tel: 281426.

Consulate General:: 5th Floor, Sudarshan Bldg. No. 86, Chamiers Road, Madras. Tel: 452329.

IVORY COAST

(Cote d'Ivoire)

Cap: Abidjan; **Area:** 322,462 sq km, **Pop:** 11,798,000; **Lang:** French (official) and Tribal; **Literacy:** 35%; **Rel:** Islam and Christianity; **Currency:** Franc CFA. $1 = 314.72 F CFA. **per capita:** $ 740.

The Ivory Coast is bordered by Mali and Burkina Faso in the north, Ghana in the east, the Gulf of Guinea in the south, and Liberia and Guinea in the west.

The Republic of Ivory Coast, once an overseas territory of France, became independent in August 1960.

Agriculture, forestry and fishing employ 90 per cent of the population. Ivory Coast is the third most important coffee producer in the world and the most important African producer of timber. Cocoa, bananas and pineapples are the other important cash crops.

President: Felix Houphouet-Boigny. **P.M.:** Alassane Quattara.

JAMAICA

Cap: Kingston; **Area:** 10,991 sq km; **Pop:** 2,362,000; **Language:** English; **Literacy:** 73%; **Rel:** Christianity; **Currency:** Jamaican Dollar. $1 = J$ 5.42. **per capita:** $ 1068.

Jamaica, an island in the Greater Antilles group of the West Indies, is situated in the Caribbean Sea, 144 km south of Cuba. The climate varies with altitude, being tropical at sea-level and temperate in the mountain area.

Jamaica was visited by Columbus in 1494 and ruled by Spain till 1655 when Britain occupied it. In 1962 Jamaica became fully independent as a member of the Commonwealth.

Agriculture, mining and tourism form the backbone of the economy. The dominant crop is sugar, with molasses and rum as important by-products. Bananas, citrus fruits and coconuts are also grown. Jamaica is the world's second largest producer of bauxite and alumina. Other industries are cement, tobacco and consumer goods.

Head of State: Queen Elizabeth II. **Gov. Gen:** Florizel Augustus Glasspole. **P.M.:** Michael Manley.

JAPAN

Cap: Tokyo; **Area:** 377,765 sq km; **Pop:** 123,800,000; **Lang:** Japanese; **Literacy:** 99%: **Rel:** Shinto and Buddhism; **Currency:** Yen. $1 = 128.85 Yen. **per capita:** $23,358.

Japan consists of four main islands, Honshu (Mainland), Hokkaido, Kyushu and Shikoku and a number of smaller islands of which Okinawa is one. Japan is separated from the Soviet Union and Korea by the Sea of Japan and from China by the East China Sea. Japan has a deeply indented coastline measuring 26,600 km. Most important ports are Yokohama, Kobe, Nagoya and Osaka.

Legend has it that the Japanese Empire was founded by Emperor Jimmu in 660 B.C. However, there was no centralized authority till A.D. 1868 when Emperor Meiji united the whole of Japan under his rule. Japan had little trade relations with foreign countries until Commodore Perry of USA in 1854 persuaded the Japanese to enter into a trade treaty with USA. In 1889 Japan had its first constitution. Japan's victory in the Russo-Japanese War of 1904-05 raised her prestige among European powers.

Main Islands of Japan

Name	Area (sq km)	Major city
Honshu	22,414	Tokyo
Hokkaido	78,073	Sapporo
Kyushu	36,555	Kitakyushu
Shikoku	18,257	Matsuyama

Rice, the staple food of Japan, is cultivated in half the area of arable land. Other crops are wheat, barley, potatoes and tobacco. Except for limestone and sulphur, Japan is poor in minerals and Japanese industry is heavily dependent on imported raw materials and fuel. Japan is one of the most industrially advanced countries of the world. The principal industries are motor vehicles, iron and steel, chemicals, textiles (cotton, wool, silk and synthetics), fishing, ceramics, precision instruments, fertilizers, machinery and shipbuilding. Japan has evolved an extensive fishing industry.

Head of State: Emperor Akihito. **P.M.:** Toshiki Kaifu.

Mission in India: Embassy of Japan, Plot No. 4 & 5, 50G Shantipath, Chanakyapuri, New Delhi - 110021. Tel: 604071.

Consulates: Babasaheb Dahanukar Marg, Cumballa Hill, Bombay - 400026. Tel: 493385, 4933843, 4934610.

12, Pretoria Street, Calcutta - 700071. Tel: 44-2241.

60 Spur Tank Road, Chetput, Madras - 600031. Tel: 869606, 864265, 864349.

JORDAN

Cap: Amman; **Area:** 97,740 sq km; **Pop:** 3,031,000; **Lang:** Arabic; **Literacy:** 31%; **Rel:** Islam; **Currency:** Jordan Dinar. $1 = JD 0.5,388 **per capita:** $ 1540.

A constitutional monarchy in south-west Asia, Jordan was popularly known as Trans-Jordan till 1949, when the popular name was changed to the Hashemite Kingdom of Jordan. The population is chiefly Arab of whom the majority are Muslims. In 1946, Jordan became an independent state.

Jordan is largely a desert area, but the western portion is fertile and produces citrus fruits, wheat, barley, lentils and water melons. Phosphates make up the country's most important export item, but tourism remains its main foreign exchange earner.

Head of State: King Hussein Ibn Talal. **P.M.:** Maudar Badran.

Mission in India: Embassy of Jordan, 35, Malcha Marg, Chanakyapuri, New Delhi - 110021. Tel: 3013495.

KENYA

Cap: Nairobi; **Area:** 582,646 sq km; **Pop:** 25,000,000; **Lang:** National - Kiswahili; official - English; **Literacy:** 50%; **Rel:** Tribal, Christianity and Islam; **Currency:** Shilling. $1 = 18.84 Shilling. **per capita:** $ 336.

Formerly a British colony, Kenya became an independent republic within the Commonwealth in 1964.

Kenya's prosperity rests largely on agricultural products. The chief cash crops are coffee, tea, sisal, cereals, wattle and pyrethrum. Kenya is one of the few African countries with an important dairy industry. Mineral industries are being organised. Tourism has expanded considerably.

President: Daniel T. Arap Moi.

Mission in India: High Commission of Kenya, 66, Vasant Marg, Vasant Vihar, New Delhi - 110057. Tel: 672303.

KIRIBATI

Cap: Tarawa; **Area:** 861 sq km; **Pop:** 65,000; **Lang:** Gilbertese and English; **Literacy:** 90%; **Rel:** Christianity; **Currency:** Australian Dollar. US $1 = $1.23. **per capita:** $ 390.

Gilbert islands, till recently a British colony, became independent under the name Kiribati (pronounced Kiribas) on July 11, 1979.

These islands, spread over a vast area in Western Pacific, number around 33. All islands except Ocean Island (Banaba) are low atolls with coconuts, pandanus and bread fruit forming the main vegetation. The population is Micronesian and Polynesian. Agriculture and fishing are the main occupations. Ocean Island has high grade phosphate deposits which are being mined and exported. Copra is the other major export item.

President: Ieremia Tabai.

KOREA (North)

Cap: Pyongyang; **Area:** 120,538 sq km; **Pop:** 21,964,000; **Lang:** Korean; **Literacy:** 99%; **Rel:** Buddhism and Confucianism; **Currency:** Won. $1 = 0.97 Won. **per capita:** $ 1180.

The People's Democratic Republic of Korea occupies the northern part of the Korean peninsula.

During the Second World War, America occupied South Korea and Russia, North Korea. At the Potsdam Conference, the 38th parallel of latitude was recognised as the line of division between the occupation areas of Russia and America. North Korea was formed into the Democratic People's Republic of Korea on Sept. 9, 1948.

All industries are nationalised and land distributed among the peasants. Agriculture has since been collectivised. Industrial development has concentrated on heavy industry, electricity, metallurgy, machinery and chemicals. The country is rich in coal and iron and many non-ferrous metals. It is one of the five leading countries of the world in the production of tungsten, graphite and magnetite.

President: Kim Il Sung. **P.M.:** Yon Hyong Muk.

Mission in India: Embassy of the Democratic People's Republic of Korea, 42-44 Sunder Nagar, New Delhi - 110003. Tel: 617140.

KOREA (South)

Cap: Seoul; **Area:** 98,859 sq km; **Pop:** 45,243,000; **Lang:** Korean; **Literacy:** 92%; **Rel:** Buddhism, Christianity and Confucianism; **Currency:** Won. $1 = 1158.55 Won. **per capita:** $ 3450.

The Republic of Korea forms the southern part of the Korean peninsula. The Republic of Korea was formally proclaimed on August 15, 1948.

Agriculture is the mainstay of the economy. The chief crop is rice. Wheat, barley and potatoes are also cultivated. Fish is both an export item and a source of food. There are substantial coal deposits. Other minerals include iron, tungsten, graphite and fluorite. Have made big leaps in industry - textiles, electronics, steel and petrochemicals.

President: Roh Tae - Woo. **P.M.:** Kang Young-Hoon.

Mission in India: Embassy of the Republic of Korea, 9 Chandragupta Marg, Chanakyapuri, New Delhi - 110021. Tel: 601601.

KUWAIT

Cap: Kuwait City; **Area:** 17,656 sq km; **Pop:** 1,967,000; **Lang:** Arabic and English; **Literacy:** 71%; **Rel:** Islam; **Currency:** Kuwait Dinar. $1 = KD 0.289. **per capita:** $ 13,890.

Kuwait, a small Arab state, is on the north western coast of the Persian Gulf between Iraq and Saudi Arabia.

One of the richest oil nations of the world, Kuwait was traditionally under the rule of the Al-Sabah dynasty founded in 1756. Became independent state on June 10, 1961.

Kuwait is the world's fourth largest producer of petroleum.

Iraq invaded and annexed Kuwait on August 2, 1990. However they were beaten back by a united force under the U.N.

Amir: Shaikh Jabir al-Ahmed al-Jabir al-Sabah. **P.M.:** Shaikh Saad al-Abdullah al-Salem al-Sabah.

Mission in India: Embassy of Kuwait, 5-A, Shantipath, Chanakyapuri, New Delhi - 110021. Tel: 600791.

Consulate General: 120 D Wachha Road, Vaswani Mansion, Bombay-400 004; Tel: 2873007, 2871879.

LAOS

Cap: Vientiane; **Area:** 236,800 sq km; **Pop:** 4,500,000; **Lang:** Lao & Tribal; **Literacy:** 41%; **Rel:** Buddhism; **Currency:** Kip. $1 = K 432. **per capita:** $ 135.

Laos-Lao People's Democratic Republic – occupies a strategic position in south east Asia. Laos became an independent republic in 1949.

The chief products are rice, tobacco, cotton, benzoin, shellac, tin, lead, zinc and teak wood. Other industries exist but on a very small scale.

President: Kaysone Phomvihare. **P.M.:**En. Khamtay Siphandon.

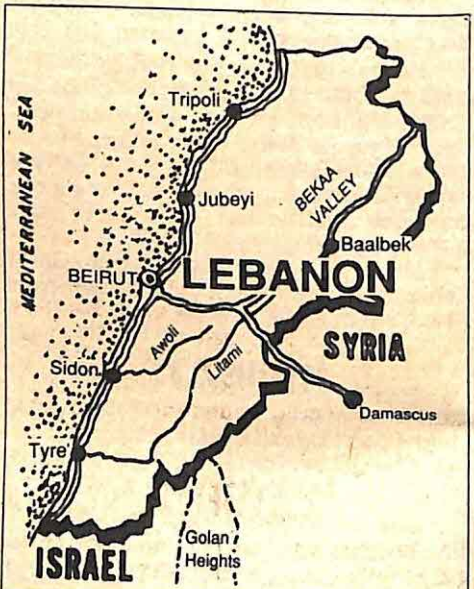
Mission in India: Embassy of the Lao P.D.R., 20 Jor Bagh, New Delhi - 110003. Tel: 616187.

LEBANON

Cap: Beirut; **Area:** 10,400 sq km; **Pop:** 2,852,000; **Lang:** Arabic; **Literacy:** 75%; **Rel:** Christianity and Islam; **Currency:** Pound. $1 = £Leb. 467. **per capita:** no reliable figures available.

The Republic of Lebanon occupies a strip of land along the Mediterranean coast between Syria and Israel. Lebanon became independent in 1941.

Primarily an agricultural country, Lebanon produces olive oil, grain and fruits. The chief industries are oil refining, food processing and cement. Tourism used to be a valuable source of income.



According to constitutional conventions the Maronite Christians and Sunni Muslims shared power. However, because of the 14-year-old civil war between the Christians (42%) and Muslims (57%) there has been no stable administration.

In October 1990, Christian army led by Gen. Michel Aoun was defeated by the Syrian backed militia supporting president Elias Hrawi, who was installed in power by all Arab consensus.

In the 16-year-old civil war above125,000 people are feared dead.

Salim Hoss led a government of national reconciliation grouping ministers from the seven main factions - Maronite Christians, Sunni Muslims, Shia Muslims, Druse, Armenian, Greek Orthodox and Greek Catholic.

President: Elias Hrawi. **Prime Minister:** Omar Karami.

Mission in India: Embassy of Lebanon, 10, Sardar Patel Road, New Delhi - 110021. Tel: 301555, 3013174.

Consulate: 27A, Camac Street, Calcutta - 700016. Tel: 44-7867.

LESOTHO

Cap: Maseru; **Area:** 30,355 sq km; **Pop:** 1,681,000; **Lang:** English and Sesotho; **Literacy:** 59%; **Rel:** Christianity and Tribal; **Currency:** Loti (Plural Maloti). $1 = 2.51 Maloti. **per capita:** $ 410.

The Kingdom of Lesotho is an enclave within the Republic of South Africa. Lesotho was a British protectorate under the name Basutoland. It became independent as Lesotho on Oct. 4, 1966.

The principal occupation is agriculture. Lesotho possesses water and hydro-electric resources of great potential. Livestock, diamonds, wool and mohair are the main exports.

Head of State: King Mohafo Sceiso. **Chairman, Military Council:** Maj. Gen. Justin Lekhanya.

LIBERIA

Cap: Monrovia; **Area:** 111,369 sq km; **Pop:** 2,544,000; **Lang:** English and Tribal; **Literacy:** 25%; **Rel:** Christianity; **Currency:** Liberian Dollar. $1 = Liberian $1. **per capita:** $ 450.

Liberia lies on the Atlantic coast of Africa. It was founded in 1822 and declared a republic on July 26, 1847.

About 90 per cent of the population is engaged in agriculture, much of it at subsistence level. Main crops are cassava, coffee, cocoa and palm oil. Iron ore and rubber are the main exports.

Civil strife tore the country apart in 1990. President Maj. Gen. Samuel Kanyon Doe was killed. An interim government led by Prof. Amos Sawyer was installed by the peace-keeping force of the Economic Community of West Africa.

Mission in India: Embassy of the Republic of Liberia, Plot No. 79, Poorvi Marg, Vasant Vihar, New Delhi - 110057.

Consulate General: 186 Sarat Bose Road, Calcutta - 700029. Tel: 46-1164.

LIBYA

Cap: Hun; **Area:** 1,759,540 sq km; **Pop:** 4,271,000; **Lang:** Arabic; **Literacy:** 60%; **Rel:** Islam; **Currency:** Libyan Dinar. $1 = LD 0.2932. **per capita:** $ 7,180.

An Arab state on the north coast of Africa, Libya changed its name to 'The Socialist People's Libyan Arab Jamahiriya' in 1977. 'Jamahiriya' means 'State of the masses'.

Formerly an Italian colony, Libya became an independent state in 1949. The capital was shifted from Tripoli to Hun in 1987.

The main agricultural products are dates, olives, almond and citrus fruits. Fishing, tobacco processing, dyeing and weaving are the important industries. Oil was discovered in 1957 and today Libya is one of the leading producers of oil in the world.

Head of State: Col. Muamar Al-Qudhafi. **P.M.:** Abu Zaid Oman Dourda.

Mission in India: People's Bureau of the Socialist People's Libyan Arab Jamahiriya, 22, Golf Links, New Delhi - 110003. Tel: 697717.

LIECHTENSTEIN

Cap: Vaduz; **Area:** 160 sq km; **Pop:** 30,000; **Lang:** German; **Literacy:** 100%; **Rel:** Christianity; **Currency:** Swiss Franc. $1 = SF 1.58. **per capita:** $ 15,000.

Liechtenstein is a small state on the upper Rhine, between Austria and Switzerland. It measures 24 km from north to south and 9 km from east to west. It became an independent kingdom in 1866.

The economy is mainly industrial. Chief industries are machines and tools, textiles, foodstuffs and leatherware.

P.M.: Hans Brunhart.

LUXEMBOURG

Cap: Luxembourgville; **Area:** 2586 sq. km.; **Pop:** 367,000; **Lang:** French, (English and German are freely spoken); **Rel:** Christianity, (95% Roman Catholics); **Currency:** Luxembourg Franc (LF), $1=LF 37,39; GNP $ 4.9 b; **per capita:** $ 12,990.

Luxembourg is a small state lying in between Germany, Belgium and France. It is a Grand Duchy.

Its independence was confirmed by the Treaty of London in 1867.

A member of the European Economic Community, the Benelux, the European, Steel and Coal Community and the Euratom, Luxembourg is a highly industrialised state. Its iron deposits form the basis of a big steel industry, which accounts for 70 per cent of the country's exports. Agriculture occupies only 10 per cent of the population.

Head of State: Grand Duke Jean.

President: Jacques Santer.

Mission in India: Consulate General of the Grand Duchy of Luxembourg, 2 Panchsheel Marg, Chanakyapuri, New Delhi-110 021. Tel: 3015855.

MACAO

Cap: Macao; **Area:** 15.5 sq km; **Pop:** 433,000; **Lang:** Portuguese and Cantonese; **Rel:** Confucianism; **Currency:** Pataca. $1 = 8.09 Patacas.

Macao or Macau is a tiny Portuguese possession in South China, at the mouth of the Canton (pearl) river. The territory consists of the Macao peninsula and the adjoining islands of Taipa and Coloane. China has permitted Macao to continue as an independent territory mainly because of the big entrepot trade it commands. Macao is a free market for gold and an infamous centre of smuggling and gambling.

The population is almost entirely Chinese. Industry, once restricted to matches and fireworks, now includes plastics, textiles, cameras, binoculars and such other consumer items. Cultivation is sparse. Only rice and vegetables are grown.

In 1987 Portugal and China agreed that Macau would revert to China in 1999.

Governor: Carlos Melancia.

MADAGASCAR

Cap: Tananarive; **Area:** 587,341 sq km; **Pop:** 11,148,000; **Lang:** Malagasy and French; **Literacy:** 53%; **Rel:** Islam; **Currency:** Malagasy Franc. $1 = FMG 1443.93. **per capita:** $ 230.

Madagascar, formerly a French overseas territory, is a large island about 500 km long off the coast of Mozambique. It became independent in 1960.

The economy is essentially agricultural. Rice is the staple food and coffee the chief export. Tobacco, cloves and vanilla are also cultivated. Large herds of cattle are raised. Mineral deposits include graphite, mica, nickel and copper. Since 1960, chromite is also mined.

President: Adm. Didier Ratsiraka. **P.M.:** Lt. Col. Victor Ramahatra.

MALAWI

Cap: Lilongwe; **Area:** 118,784 sq km; **Pop:** 8,063,000; **Lang:** English and Chichewa; **Literacy:** 25%; **Rel:** Tribal and Islam; **Currency:** Kwacha. $1 = K2.65. **per capita:** $ 160.

Malawi is bounded by Tanzania, Mozambique and Zambia. Lake Nyasa lies on its eastern side. A land of lakes and mountains, Malawi has infinite beauty and is considered a tourists' paradise. Malawi, formerly Nyasaland, became independent in 1966.

Poor in resources, Malawi's agriculture is still at subsistence level. The chief cash crops are tea and tobacco, sugar and cotton.

President: Dr. Hastings Kamuzu Banda.

MALAYSIA

Cap: Kuala Lumpur; **Area:** 330,434 sq km; **Pop:** 17,500,000; **Lang:** Bahase Malaysia; **Literacy:** 80%; **Rel:** Islam; **Currency:** Ringgit.

$1 = Ringgit 2.75. **per capita:** $ 1820.

Malaysia is a federation of 13 states comprising Johor, Kedah, Kelantan, Melakaa, Nigeri Sembilan, Pahang, Perlis, Pulau Pinang, Sabah, Sarawak, Selangor and Terengganu.

Malaysia has a multi-racial populace. Total population is about 17 million consisting of 55 per cent Malays, 33.4 per cent Chinese, 10.1 per cent Indians and 1.4 per cent others.

Achieved independence in 1957.

Malaysia is the world's largest producer of rubber, tin and palm oil. Malaysia is also the world's leading exporter of pepper and timber. Other crops are coconut, vegetables, pineapples, coffee, tea, cocoa etc.

Iron ore, gold, ilmenite and bauxite are the major mineral resources. The petroleum industry in Malaysia is becoming significantly important to the economy of the nation. Leading industries are food products, tobacco, wood products, electrical goods, textiles, chemical products, construction goods, non-metallic products, transport equipment and the processing of agricultural products from estates (eg. rubber, palm oil).

Supreme Head of State: Sultan Azlan Shah. **P.M.:** Dr. Mahathir bin Mohamad.

Mission in India: High Commissioner of Malaysia, 50-M Satya Marg, Chanakyapuri, New Delhi - 110021. Tel: 601291.

Asst High Commission: 287, TTK Road, Madras-600 018. Phone: 453599, 453580.

MALDIVES

(See South Asia)

MALI

Cap: Bamako; **Area:** 1,239,998 sq km; **Pop:** 8,460,000; **Lang:** French (official); **Literacy:** 10%; **Rel:** Islam and Tribal; **Currency:** Franc CFA; $1=Franc CFA 314.72. **per capita:** $ 170.

Mali is a land-locked state in West Africa. It was proclaimed an independent republic in 1960.

The country is poor in natural resources. Only about 20 per cent of the land is cultivable. The main crops are rice, millet and groundnuts. Livestock-raising is important and the processing of hides and skins remains the only industry. There is extensive river-fishing and good export trade in dried and smoked fish.

President and P.M: MaMadu Kulibai.

MALTA

Cap: Valletta; **Area:** 316 sq km; **Pop:** 358,000; **Lang:** Maltese and English; **Literacy:** 90%; **Rel:** Christianity; **Currency:** Lira Maltija. $1=LM 0.338. **per capita:** $3470.

Malta is an island in the central Mediterranean Sea, 95 km from Sicily and about 290 km from the African coast. This state also includes the adjoining islands of Gozo and Comino. Malta became an independent republic in 1964.

The rocky country has no natural resources. Textiles, footwear, rubber products and plastics are exported. Agricultural products include onions, potatoes and tomatoes. Tourism, however, remains the island's major industry.

Ag. President: Dr. Censu Tabone. **P.M:** Dr. Edward Fenech Adami.

MAURITANIA

Cap: Nouakchott; **Area:** 1,030,700 sq km; **Pop:** 1,804,000; **Lang:** Arabic and French (official); **Literacy:** 17%; **Rel:** Islam; **Currency:** Ouguiya. $1=Ouguiya 75.31. **per capita:** $ 440.

The Islamic Republic of Mauritania is on the Atlantic coast of the West African bulge.

Mauritania, a former French overseas territory, became autonomous in 1958 and fully independent in 1960.

The population is traditionally nomadic rearing cattle and sheep. Fishing is important. Deposits of iron and copper are being exploited. Oil prospecting is going on.

President and P.M: Col. Moaouia Ould Sidi Mohamed Taya.

MAURITIUS

Cap: Port Louis; **Area:** 2040 sq km; **Pop:** 1,047,900; **Lang:** English, French and Hindustani; **Literacy:** 79%; **Rel:** Hinduism, Christianity and Islam; **Currency:** Rupee. $1=Rupees 14.34. **per capita:** $1720.

Mauritius lies about 800 km east of Madagascar in the Indian Ocean.

It became an independent state on March 12, 1968.

The island is an extreme example of one-crop economy, sugarcane being the only crop. Molasses, tea and tobacco are exported. Tourism is a highly developed industry.

Head of State: Queen Elizebeth II. **Gov. Gen:** Sir Veera Swamy Ringadoo. **P.M:** Sir Aneerood Jugnauth.

Mission in India: High Commission of Mauritius, 5 Kautilya Marg, Chanakyapuri, New Delhi-110021. Tel: 3011112.

MEXICO

Cap: Mexico City; **Area:** 1,972,547 sq km; **Pop:** 85,100,000; **Lang:** Spanish; **Literacy:** 92%; **Rel:** Christianity; **Currency:** Peso. $1=Pesos 2362. **per capita:** $1860.

A federal republic of middle America, Mexico became an independent state in 1821.

Mexico is not well suited for agriculture so it is obliged to import food. The important agricultural products are maize, rice, wheat and sugar. Sea fishing is also important as an occupation. Mexico is the world's leading producer of silver, sulphur and fluorite. Other minerals include coal, zinc, lead, manganese, bauxite and uranium. In recent years, Mexico has become one of the main producers and exporters of petroleum.

President: Carlos Salinas de Gortari.

Mission in India: Embassy of Mexico, 10 Jor Bagh, New Delhi-110003. Tel: 697991.

MONACO

Cap: Monaco; **Area:** 195 sq km; **Pop:** 29,000; **Lang:** French & Monegasque; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Franc $1=Francs 6.29.

Monaco is a sovereign principality on France's south-eastern Mediterranean coast.

The principality is a series of connected towns–Monaco-Ville, La Condamine, Fontvieille and Monte Carlo with its casinos, opera house, grand hotels, shops and villas.

Monaco is a fashionable pleasure resort visited by thousands of tourists every year. Its main attractions are the casinos and its international motor sports—the Monte Carlo Rally and the Monaco Grand Prix. Tourism, gambling, and tobacco monopoly are its main sources of income.

There are a number of light industries.

Head of State: Prince Rainier III.

Mission in India: Consulate General of Monaco, 114, Sundar Nagar, New Delhi-110003. Tel: 623193.

MONGOLIA

Cap: Ulan Bator; **Area:** 1,565,000 sq km; **Pop:** 2,093,000; **Lang:** Mongolian; **Literacy:** 89%; **Rel:** Buddhism and Lamaism; **Currency:** Tugrik. $1=Tugriks 3.37. **per capita:** $940.

The Mongolian People's Republic lies in Central Asia with the Soviet Union to the north and China to the south, east and west. It became an independent state in 1921. In July 1990, Communists won in the first free elections to the legislature.

Livestock-raising is the principal occupation and comprises horses, oxen, sheep, goats and camels. The herdsmen are organised in collectives. State farms practise large-scale agriculture. Minerals include coal, flourspar, tungsten, tin and copper.

Chairman of the Presidium: Dr. Jambyn Batmunkh. **P.M:** Dumaagiym Sodnom.

Mission in India: Embassy of the Mongolian People's Republic, 34, Archbishop Makarios Marg, New Delhi-110003. Tel: 618921.

MONTSERRAT

Cap: Plymouth; **Area:** 102 sq km; **Pop:** 11,852; **Lang:** English and Patois; **Rel:** Christianity; **Currency:** Eastern Caribbean Dollar; $1=EC$2.71. **per capita:** $3127.

Montserrat, like Antigua, is one of the Leeward Islands. Its population is of mixed European-Negro origin. Europeans proper form a minority. Agriculture is the mainstay of the people. Sea island cotton and vegetables like tomatoes form the main exports.

It is a British Associate State with full internal autonomy.

Gov: C. J. Turner; **Chief Minister:** Dr. J. A. Osborne.

MOROCCO

Cap: Rabat; **Area:** 800,000 sq km; **Pop:** 25,380,000; **Lang:** Arabic; **Literacy:** 70%; **Rel:** Islam; **Currency:** Dirham. $1=DH 8.31. **per capita:** $590.

The Kingdom of Morocco, which is a constitutional monarchy, is situated at the extreme northwest of Africa. The Atlas mountains stretch across Morocco.

Morocco recovered its political independence from France on March 2, 1956, and gained control over the Northern Spanish zones in 1958.

Primarily an agricultural country, Morocco produces cereals, including barley, wheat and corn. Vineyards are abundant and dates form a regular crop. Livestock raising is important and fishing is well-developed. The most important mineral extracted is phosphate, of which Morocco remains a world supplier. Other minerals are iron ore, coal, lead and manganese.

Head of State: King Hassan II. **PM:** N. Azzeddine Laraki.

Mission in India: Embassy of Morocco, 33 Golf Links, New Delhi-110003.

MOZAMBIQUE

Cap: Maputo; **Area:** 783,030 sq km; **Pop:** 15,259,000; **Lang:** Portuguese and Bantu; **Literacy:** 14%; **Rel:** Islam and Christianity; **Currency:** Metical (Plural: Meticais). $1=671 Meticais. **per capita:** $90.

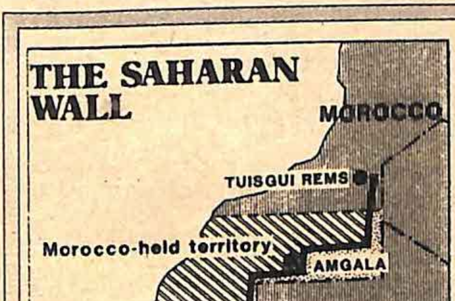
Mozambique is the old Portuguese East Africa. Mozambique Channel of the Indian Ocean bounds it in the east. The majority of the population belongs to the *Bantu* tribe.

The economy is based on agriculture. The major cash crops are cashewnuts, sugar, cotton and sisal. Maize, bananas, rice and coconuts are also grown. Considerable mineral resources exist although only coal, diamonds and bauxite are now exploited. Mozambique has two-thirds of the world's known reserves of tantalite and is the second largest producer of beryl.

President: Joaquim Alberto Chissano; **P.M.:** Mario da Graca Machungo.

MYANMAR

Cap: Yangon (Rangoon); **Area:** 676,553 sq km; **Pop:** 40,300,000; **Lang:** Burmese and Tribal; **Literacy:** 66%; **Rel:** Buddhism; **Currency:** Kyat. $1 = K. 6.63. **per capita:** $200.



Peace in Sahara

The Sahrawi Arab Democratic Republic (SADR) set up by the Polisario Front in Western Sahara is a territory that came under Morocco's control after Spain withdrew.

Algeria supported the Polisario-led struggle for independence.

The new Republic is headed by President Mohammed Abde Aziz (who is also Secretary-General of the Polisario Front) and P.M. Mohammed Lamine.

India accorded recognition to the new government on Oct. 1, 1985.

In 1990 UN efforts are underway to end the 15-year-old war between Morocco and Polisario Front guerillas.

Originally a part of British India, Union of Myanmar (Burma till May 1989) became an independent country on January 4, 1948.

Myanmar is known as the "rice bowl of the Far East". The chief minerals are petroleum, lead, tin, zinc, tungsten, copper, antimony, silver and gems. The rubies, sapphires and jade found in Myanmar are especially famous. Teakwood is exported.

Gen. Ne Win who ruled Burma with an iron hand for 26 years was forced out in popular uprising in mid-1988. In June 1990, in the first free-elections in 30 years, the National League for Democracy won big majority but the army was reluctant to handover power. Aung San Suu Kyi, the leading opposition leader was kept under house arrest.

Prime Minister: Gen. Saw Maung.

Mission in India: Embassy of Burma, Plot No. 3, Block No. 50/F, Nyaya Marg, Chanakyapuri, New Delhi-110021. Tel: 600251.

NAMIBIA

Cap: Windhoek; **Area:** 824,292 sq km; **Pop:** 1,290,000; **Lang:** English & Afrikaans; **Rel:** Christianity and Tribal; **Currency:** Rand. $1=R 2.51. **per capita:** $1020.

Namibia, formerly known as South West Africa, lies on the Atlantic coast of Africa. After prolonged insurgency a peace accord was signed on 5th October, 1988 by Angola, Cuba and South Africa and Namibia became a fully independent nation under the UN mandate on 21 March, 1990. The first general elections for a Constituent Assembly was held in November 1989 when SWAPO (South West Africa People's Organisation) which spearheaded the freedom struggle for 30 years was swept to power.

The biggest population group is *the Owambos.*

Diamonds are Namibia's most valuable economic asset followed by copper, zinc, lead, germanium and manganese. Stockbreeding is important; cattle, sheep and goats abound. Fishing is a supplementary source of food and income.

President: Sam Nujoma; **P.M:** Hage Geingob.

NAURU

Cap: Nauru; **Area:** 20.9 sq km; **Pop:** 8100; **Lang:** English and Nauruan; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Australian Dollar. $ 1=Aus. $ 1.23. **per capita:** $ 9091.

Nauru is a small island in the central Pacific. It is an oval-shaped coral island of approximately 20 km in length. surrounded by a reef which is exposed at low tide. Nauru became independent on Jan. 31, 1968.

About four-fifths of Nauru is phosphate-bearing rock. It is the only export.

President: Bernard Dewi Yogo.

Mission in India: Consulate General of the Republic of Nauru, C-5/4, Safdarjung Development Area, New Delhi-110016. Tel: 667977.

NEPAL

(see South Asia)

NETHERLANDS

Cap: Amsterdam; Seat of Govt: The Hague; **Area:** 41,160 sq km; **Pop:** 14,689,000; **Lang:** Dutch; **Literacy:** 99%; **Rel:** Christianity; **Currency: Guilder**, $1=Guilders 2.09; **per capita:** $ 13065.

The Kingdom of the Netherlands comprises the Netherlands and Antilles. The country is plainland with an average height of 11 m. above sea-level. Much of the land, however, is below sea-level and is protected by dykes, which extend for some 2400 km.

Agriculture has been mechanised and developed. Foodstuffs form the largest industrial sector. Dairy products account for one-quarter of exports. Other major industries include chemicals, metallurgy, machinery and electrical goods. Amsterdam is famous as a world centre for diamonds, precious metals and art treasures.

Head of State: Queen Beatrix. **P.M.:** Ruud F.M. Libbers.

Mission in India: Embassy of Netherlands, 6/50 F, Shantipath, Chanakyapuri, New Delhi-110 021. Tel: 609571.

Consulates: The International, 3rd Floor, 16 M. Karve Road, Church Gate, Bombay. Tel: 296840.

18 A Brabourne Road, Calcutta. Tel: 262160-64.

Chordia Mansion, 739, Annasalai, Madras-600 002. Tel: 811566.

NEW ZEALAND

Cap: Wellington; **Area:** 269,057 sq km; **Pop:** 3,400,000; **Lang:** English and Maori dialect; **Literacy:** 99%; **Rel:** Christianity; **Currency:** New Zealand Dollar; $1=NZ$ 1.63. **per capita:** $10,350.

New Zealand, lying in the South Pacific Ocean with Tasman Sea on the west, consists of two large islands, North Island and South Island and numerous small islands. It gained dominion status in 1907.

Primary industries are dairying, meat and wool. The major crops are wheat, oats and barley. Minerals include coal and gold. Pulp and paper industry is highly developed. Iron, steel and aluminium are new industries.

Head of State: Queen Elizabeth II. **Gov. Gen:** Sir Paul Reeves, **P.M:** Michael Moore.

Mission in India: High Commission of New Zealand, 25 Golf Links, New Delhi-110003. Tel: 697296.

NICARAGUA

Cap: Managua; **Area:** 130,000 sq km; **Pop:** 3,692,000; **Lang:** Spanish and English; **Literacy:** 66%; **Rel:** Christianity; **Currency:** New Cordoba. $1=4209 New Cordobas. **per capita:** $790.

The republic of Nicaragua is located in the heart of Central America. It became an independent state in 1838. The Somoza dynasty ruled Nicaragua from 1933 to 1979.

The third Somoza was overthrown by armed revolution led by Sandinista National Liberation Front, which emerged as the leading political force in the election held in 1984. But contra rebels, comprising mainly former members of Nicaraguan National Guard and supported by the U.S. waged a nine-year war against the government led by Daniel Ortega Saavedra. About 30,000 people were killed. With the defeat of Ortega in the elections held in 1990, the civil war came to a close.

Agriculture is the principal source of national income. The most important agricultural products are cotton, coffee and sugarcane. Chief industries are matches, leather, beer and plastic goods. Gold, copper, silver, lead and zinc are found.

President: Mrs. Violeta Barios de Chamorro.

Mission in India: Embassy of the Republic of Nicaragua, C-5/29, Safdarjung Development Area, New Delhi-110016. Tel: 657109.

NIGER

Cap: Niamey; **Area:** 1,267,000 sq km; **Pop:** 7,440,000; **Lang:** French and Hausa; **Literacy:** 13%; **Rel:** Islam and Tribal; **Currency:** Franc CFA, $ 1=Franc CFA 314.72. **per capita:** $ 260.

The Republic of Niger lies in the heart of West Africa.

Formerly part of French West Africa, Niger became fully independent in 1970.

It is an agricultural country with very limited resources. The principal crops are peanuts and cotton. Cattle-breeding is the next most important occupation of the people. Uranium has been discovered and mining is going on.

President: Col. Ali Seibou. **P.M:** Mamane Oumarou.

NIGERIA

Cap: Lagos (Federal); **Area:** 923,768 sq km; **Pop:** 109,600,000; **Lang:** English, Hausa, Ibo and Yoruba; **Literacy:** 42%; **Rel:** Islam, Christianity and Tribal; **Currency:** Naira. $1=N 7.28. **per capita:** $ 640.

The Federation of Nigeria is a West African coastal state within the Gulf of Guinea. River Niger flows through south western Nigeria towards the south where it is joined by its chief tributary Benue River, and empties into the Gulf of Guinea, creating an extensive swampy delta.

Nigeria became an independent state in 1960 and a republic within the Commonwealth in Oct. 1963.

The chief agricultural products are cocoa, plam oil, palm kernels, cotton, rubber, peanuts and skins. Tin, lead, columbite, coal and iron ore represent the chief minerals. There is extensive exploitation of the forest for various timbers. Crude oil exports have become important since 1970. Industry is diversified, beer, cement, cigarettes and aluminium products being the main items.

Head of State and Govt: Maj. Gen. Ibrahim Babangida.

Mission in India: High Commission of Nigeria, 21 Palam Marg, Vasant Vihar, New Delhi-110057. Tel: 670405.

NORWAY

Cap: Oslo; **Area:** 323,895 sq km; **Pop:** 4,204,000; **Lang:** Norwegian; **Literacy:** 100%; **Rel:** Christianity; **Currency:** Kroner. $1=Kroner 6,75. **per capita:** $16,400.

Norway extends along the western part of the Scandinavian Peninsula from Skagerrak which separates it from Denmark to North Cape in the Arctic Ocean, where it meets Finland and Soviet Russia.

Norway is known as the *Land of the Midnight Sun,* because in North Cape area, the sun does not set from middle May until the end of July, nor does it rise above the horizon from the end of November to the end of January.

The important agricultural products are barley, oats, rye and potatoes. Fishing is a major occupation with immense quantities of cod, herring, whale, tuna, seal, mackerel and salmon. Forests provide raw material for many industries. Mining is an important industry. There is very little coal but plenty of hydro-electric power to run big factories. The principal manufactures are food products, machinery and metal work, wood, paper and pulp, aluminium and electro-chemical products.

Head of State: Ag. Monarch Crown Prince Hurald. **P.M:** Gro Harlem Brundtland.

Mission in India: Embassy of Norway, Shantipath. Chanakyapuri, New Delhi-110021. Tel: 605982.

Consulate General: Naoroji Mansion, 31 Nathelal Parekh Marg, Bombay-400 001; Phone: 242042.

Consulate: 230 A, JC Bose Road, Calcutta. Tel: 444757.

Consulate: Harbour Gate, 44/45, Rajaji Salai, Madras-600 001. Phone: 517953.

OMAN

Cap: Muscat; **Area:** 300,000 sq km; **Pop:** 1,389,000; **Lang:** Arabic; **Literacy:** 20%; **Rel:** Islam; **Currency:** Rial Omani. $1=Rial Omani 0.38. **per capita:** $ 4990.

The Sultanate of Oman, formerly Muscat & Oman, occupies the south-eastern part of the Arabian Peninsula. Its coastline stretches along the Arabian Sea, the Gulf of Oman and the Persian Gulf. Oman adopted the present name in 1970.

Where there is water, the land is very fertile. The Batina coastal plain is famous for its dates, fruits and grains. Oil, however, is the ace of the economy.

Head of State & Govt: Sultan Qabus bin Said.

Mission in India: Embassy of Oman, 16, Palam Marg, Vasant Vihar, New Delhi-110057. Tel: 670215.

Consulate: 21 Jolly Makers Apts, 3 Cuffee Parade, Colaba, Bombay-400 005.

PAKISTAN

(see South Asia)

PANAMA

Cap: Panama City; **Area:** 77,082 sq km; **Pop:** 2,370,000; **Literacy:** 87%; **Lang:** Spanish; **Literacy:** 87%; **Rel:** Christianity; **Currency:** Balboa, $1=Balboa 1. **per capita:** $2330.

Panama is a narrow strip of territory at the southern end of the isthmus separating North and South America. At its narrowest point, 80 km wide, the Atlantic and the Pacific Oceans are united by the famous Panama Canal. Panama declared itself independent in 1903.

Control over the Panama Canal, linking the Atlantic and the Pacific oceans, had long been a bone of contention between the US and Panama. In 1978, it was agreed that the US will relinquish all its claims in favour of Panama at the close of the century.

The soil is extremely fertile but nearly one-half of the land is uncultivated. The chief crops are bananas, coffee and cereals. Industry is mainly centred around sugar and alcoholic beverages. Shrimp fishing is important. There are excellent timber resources, notably mahogany.

President: Guillermo Endara Gallimany.

Mission in India: Embassy of Panama, D-129, Panch Sheel Enclave, New Delhi-110017. Tel: 643-8620.

Consulate General: Maker Arcade, Cuffe Parade, 53, Ground Floor, Bombay-400005. Tel: 21-5585.

PAPUA NEW GUINEA

Cap: Port Moresby; **Area:** 462,840 sq km; **Pop:** 3,700,000; **Lang:** Melanesian and Papuan; **Literacy:** 32%; **Rel:** Christianity and Tribal; **Currency:** Kina. $1=K 0.85. **per capita:** $ 995.

Papua New Guinea comprises the eastern section of the island of New Guinea and adjacent islands.

It is a region of lofty mountains and swampy plains. The surrounding islands are largely of volcanic or coral origin.

The population consists of dark-skinned Melanesians, who live mostly along the coasts and woolly-haired Papuans who inhabit the interior.

Agriculture occupies the majority of the population, most of whom are subsistence farmers. Sago, yarns, taro, manioc, and sweet potatoes are the main food crops. Cash crops include coconuts, cocoa, coffee and rubber. The country has large deposits of various minerals. Gold and copper are being mined. Oil and natural gas have also been found.

Gov. Gen: Ignatius Kilage; **P.M:** Rabbie Namaliu.

PARAGUAY

Cap: Asuncion; **Area:** 406,752 sq km; **Pop:** 4,518,000; **Lang:** Spanish, Guarani; **Literacy:** 81%; **Rel:** Christianity; **Currency:** Guarani, $1=Guaranies 401; **Per capita:** $ 880.

Paraguay is one of the landlocked countries of South America surrounded by Bolivia, Brazil and Argentina. The Paraguay river is navigable for some 3000 km. and steamers come upto Asuncion which is the chief port of the state. This makes up for lack of coastline or sea harbours. It became independent in 1811.

About 75 per cent of the population is engaged in agriculture and allied pursuits with cattle breeding as an important occupation. The most important agricultural crops are corn, cotton, beans, tobacco and citrus fruits. The timber resources of the state are enormous. The chief exports are beef and other food products, quebracho (hard wood), hides and skins.

President: Gen. Andrew Rodriguez.

PERU

Cap: Lima; **Area:** 1,281,215 sq km; **Pop:** 21,800,000; **Lang:** Spanish and Quechua; **Literacy:** 79%; **Rel:** Christianity; **Currency:** Inti, $1=Inti 963; **Per capita:** $1470.

Peru is on the Pacific coast of S. America. The Andes mountains dominate Peru. Some of the rarest species of animals, the vicuna, the llama, the alpaca and the cross-breed paco-vicuna are found in the Andean mountains, where they are now protected.

Peru was originally the seat of the famous Inca (Red Indian) Empire. It became independent on 28 July, 1821.

The leading agricultural products are cotton, wool, sugar, coffee, rice and potatoes. Corn which is native to Peru is the staple food of the Indians, who also cultivate alfalfa. Fishing industry is well developed and Peru is the world's most important producer of fishmeal. The country is rich in minerals and some mines dating back to the Incas are even now worked. Peru is one of the leading producers of silver. Some of the biggest copper mines in the world are located in Peru. The chief exports are cotton, fish products, petroleum, sugar and iron ore.

President: Alberto Fujimori. **P.M:** Carlos Torres Y. Torres Lara.

Mission in India: Embassy of Peru, D 1/39, Vasant Vihar, New Delhi-110057. Tel: 673937.

Consulate: 6 K Dubash Marg, Bombay-400023, Phone: 244743.

PHILIPPINES

Cap: Manila. **Area:** 2,99,404 sq km; **Pop:** 60,500,000; **Lang:** Filipino and English; **Literacy:** 88%; **Rel:** Christianity and Islam; **Currency:** Peso. $1=Pesos 20.92; **Per capita:** $650.

The Philippines lies 600 miles off the southeast coast of Asia, 15 degrees north of the equator.

An archipelago, the Philippines is composed of 7107 islands, which include the main island groups of Luzon and Mindanao.

The country's industries include rubber products, oil-refining, fruit canning, flour milling, paper, salt, cigars and cigarettes, cement, fertilizers, plywood and lumber, metal and glassware, furniture and textiles, medicinal and pharmaceutical goods, food products and beverages.

Major agricultural crops are rice, maize, sugar, tobacco, abaca, pineapple, coconut, bananas, mangos, etc.

The Philippines is rich in natural resources and has iron, silver, gold, chromite, manganese and copper deposits in commercial quantity. It has also marble quarries, forests and extensive fishing grounds.

Philippines became an independent republic on June 12, 1898.

President: Corazon C. Aquino.

Mission in India: Embassy of Philippines, 50-N, Nyaya Marg, Chanakyapuri, New Delhi-110021. Tel: 608491.

Consulates General: Industry House, 159 Churchgate Reclamation, Bombay-400 020. Tel: 2026340, 2023792.

Mercantile Buildings (2nd Floor), Block E-10, Lal Bazaar, Calcutta-700001. Tel: 206092, 200511.

Arti Arcade, 86 Dr. Radhakrishnan Road, Madras. Tel: 470160.

POLAND

Cap: Warsaw; **Area:** 312,677 sq km; **Pop:** 38,389,000; **Lang:** Polish; **Literacy:** 98%; **Rel:** Christianity; **Currency:** Zloty. $1=zlotys 3100. **Per capita:** $2070.

A Republic of upper central Europe, Poland's history goes back to the tenth century A.D. Partitioned in the 18th century, it became independent in 1918. The Nazi invasion of Poland in 1939 initiated World War II. The country was liberated again in 1944.

Solidarity movement led by Nobel Prize winner Lech Walesa played an important part in bringing down the communist dictatorship in 1989. And the communist party was dissolved in 1990.

Thirty-two percent of the population is engaged in agriculture. Chief crops are rye, wheat, oats, potatoes, sugar beets, tobacco and flax. The country has vast resources of mineral wealth, particularly coal, besides iron, lignite, natural gas, lead and zinc. Textiles, chemicals and metallurgy are old, established industries. New industries include automobiles, tractors, heavy machinery, shipbuilding and aircraft manufacturing. Main exports are ships, coal, steel and clothing. Wide ranging measures to convert the economy into a market oriented system were introduced in 1989.

President: Leeh Walesa. **P.M:** Jan Kryzsztof Bielecici.

Mission in India: Embassy of Poland, 50 M, Shantipath, Chanakyapuri, New Delhi-110021. Tel: 608321.

Consulates: Manavi Apartments, 36 B. G. Kher Marg, Bombay-400 006; Tel: 8123863, 8123376.

Calcutta: 3-B, Albert Road, Calcutta-700017. Tel: 447144.

PORTUGAL

Cap: Lisbon; **Area:** 92,072 sq km; **Pop:** 10,240,000; **Lang:** Portuguese; **Literacy:** 83%; **Rel:** Christianity; **Currency:** Escudo. $1=Escudos 152.35; per capita: $ 2230.

Portugal is a small rectangular territory in the southwest corner of the Iberian Peninsula.

Portugal was an independent kingdom from the 12th century. It became a republic in 1910.

Nineteen per cent of the country is forest, where pine, oak, chestnut and cork grow in abundance. Vineyards are found everywhere and wines, olive oil and fruits are produced in large quantities. The major minerals are coal, copper, kaolin, wolframite, lithium and titanium. Textiles, chemicals, paper and glassware are the principal manufactures. The main exports are wine, canned sardines, tuna, anchovies, resins and cork. Portugal is one of the leading countries in the world which produce cork.

President: Dr. Mario Soares. P.M.: Anibal Cavaco Silva.

Mission in India: Embassy of Portugal, A-24 West End Colony, New Delhi-110 021. Tel: 674596.

Hon Consul, Moti Mahal, J. Tata Road, Church Gate, Bombay. Tel: 221868, 233630.

PUERTO RICO

Cap: San Juan; **Area:** 8891 sq km; **Pop:** 3,286,000; **Lang:** Spanish and English; **Rel:** Christianity; **Currency:** Dollar. **Per capita:** $4301.

The island of Puerto Rico lies 80 km east of Hispaniola (Haiti and Dominican Republics) in the outer Caribbean. In 1952, it ceased to be a colonial possession and became a free Commonwealth. It has close association with U.S. People have U.S. citizenship with no voting rights.

From a purely agricultural country, Puerto Rico is fast changing to an industrial economy. The main crops are sugar, tobacco and coffee. Industries include textiles, clothing, cigars, alcohol, chemicals and household appliances. Tourism is an important source of revenue.

Governor: Rafael Hernandez Colon.

QATAR

Cap: Doha; **Area:** 11,000 sq km; **Pop:** 342,000; **Lang:** Arabic; **Literacy:** 60%; **Rel:** Islam; **Currency:** Riyal. $1=Riyals 3.66. **Per capita:** $22940.

Qatar is a 160 km. long tongue of land jutting into the Persian (Arabian) Gulf. It is surrounded almost on three sides by the Persian Gulf. Saudi Arabia lies to the south.

It became independent in 1971 when Britain withdrew from the Persian Gulf. Qatar is an absolute monarchy.

Most of the population live in and around Doha, the capital. Immigrants from Pakistan, Iran and Oman now outnumber the native Qataris. Today the oil industry provides over 90% of the national income but employs only less than 5% of the population. Qatar is connected by road to the rest of Arabia and by air to the rest of the world.

Amir: Sheikh Khalifah bin Hamad al Thani. Heir Apparent: Sheikh Hamad bin Khalifah al Thani.

Mission in India: Embassy of Qatar, A-3 West End Colony, New Delhi-110021. Tel: 673745.

Consulate: Bajaj Bhavan, Nariman Point, Bombay-400 021; Phone: 2048126.

ROMANIA

Cap: Bucharest; **Area:** 237,500 sq km; **Pop:** 23,155,000; **Lang:** Romanian; **Literacy:** 98%; **Rel:** Christianity; **Currency:** Leu (plural Lei.) $1=8.59 Lei; **Per capita:** $2940.

Romania, in the south east of the central part of Europe ended Communist dictatorship in 1989 by shooting long-time president Nicolae Ceausescu. National Salvation Front took over power in 1990.

The Black Sea shore has a length of 245 km. Modern Romania was formed in 1859. Industry now dominates Romania's economy.

Heavy industries are predominated by drilling rigs for oil, equipment for oil refineries, petrochemical industry, cement, thermo and hydro electric power, diesel and electric locomotives of high capacity, engineering and consumer goods, etc.

Romanian agriculture recorded profound changes during the last three decades. The changes began with the land reforms of 1945. The small and middle-sized peasant properties were converted into co-operatives, a process which started in 1949 and ended in 1962. Land, which is the common property of the co-operative farmers, is tilled in common.

The exports are mostly made up of machines and equipment, chemical products, chemicals, fertilizers and industrial consumer goods.

President: Ion Iliescu. **P.M:** Victor Babiue.

Mission in India: Embassy of Romania, 52/A Vasant Marg, Vasant Vihar, New Delhi-110057. Tel: 670700.

RWANDA

Cap: Kigali; **Area:** 26,338 sq km; **Pop:** 7,276,000; **Lang:** French and Kinyarwanda; **Literacy:** 37%; **Rel:** Tribal and Islam; **Currency:** Rwanda Franc. $1=RF 79.17; **Per capita:** $290.

Rwanda is a republic in central eastern Africa, just below the equator. The population of Rwanda includes Watutsi, Bahutu and Batwa tribes.

The Republic of Rwanda, formerly part of the Belgian Trusteeship of Ruanda-Urundi in east central Africa, became independent in 1962.

The economy is agricultural and remains mainly at the subsistence level. Coffee, cotton and pyrethrum are the principal crops. Minerals include tin ore, tungsten, tantalite, and beryl. Industry is undeveloped. Livestock raising is widespread and hides and skins are exported.

President: Maj-Gen. Juvenal Habyarimana.

SAN MARINO

Cap: San Marino; **Area:** 61 sq km; **Pop:** 23,000; **Lang:** Italian; **Literacy:** 97%; **Rel:** Christianity; **Currency:** Italian Lira. $1=Lire 1361.

The republic of San Marino is situated on the slope of Mount Titano in the Apennines on the Adriatic side at the tip of Italy.

It claims to be the oldest state in Europe, having been founded in A.D. 301.

The principal products are wheat, wine and olives. Industries include textiles, ceramics, cement, paper, leather and woollen goods. Tourism is the major source of revenue.

Captains-Regent: appointed every six months from the Great and General Council of 60 members elected every 5 years.

Mission in India: Consulate General of San Marino, 15, Aurangzeb Road, New Delhi-110011. Tel: 6411991.

SAO TOME & PRINCIPE

Cap: Sao Tome; **Area:** 964 sq km; **Pop:** 114,000; **Lang:** Portuguese, native dialects, **Literacy:** 50% **Rel:** Christianity; **Currency:** Dobra. $1=Dobra 102.19 **per capita:** $ 340.

These two islands, with a few other nearby islets, lie in the Gulf of Guinea, about 125 miles from Gabon. Situated north of the equator, these islands have hot steaming weather in the summer, but plenty of rainfall. The largest of the islands is Sao Tome, on which stands *Sao Tome,* the capital and chief port.

These islands were under the Portuguese until 1975 when they became independent.

Today, the country's economy is geared almost exclusively to the production of agricultural export commodities, especially cocoa. Sao Tome has to import most of its food. There is virtually no manufacturing industry except soap, soft drinks etc.

President and P.M.: Miguel Trovoada.

SAUDI ARABIA

Cap: Riyadh (Royal) and Jeddah (Administrative); **Area:** 2,149,690 sq km; **Pop:** 14,900,000; **Lang:** Arabic; **Literacy:** 50% (Men); **Rel:** Islam; **Currency:** Rial. $1=Rials 3.76; **per capita:** $ 6950.

Saudi Arabia occupies nearly four-fifths of the Arabian peninsula.

In the province of Hejaz are Medina, where Mohammed the Prophet was buried on 7th June 632 and Mecca, the birthplace of the Prophet. There is a great mosque in Mecca which shelters the sacred shrine, the Kaabdta. On one side of the Kaaba is the black stone believed to have been given to Abraham by Archangel Gabriel. This shrine is the place of pilgrimage for Muslims the world over.

Saudi Arabia is an absolute monarchy, with no parliament.

Saudi Arabia has great oil wealth and is the foremost exporter of petroleum products today. The income from oil forms the major source of public revenue. All the same, Saudi Arabia remains an agricultural country whose main products are dates, wheat, barley, fruit, hides and wool.

Head of State & Govt: King Fahd Ibn Abdel Aziz al Said.

Mission in India: Embassy of Saudi Arabia. S-347, Panchshila Park, New Delhi-110 017. Tel: 665419.

Royal Consulate: Maker Tower, F Cuffe Parade, Bombay-400 005; Tel: 217768, 211598.

SENEGAL

Cap: Dakar; **Area:** 196,162 sq km; **Pop:** 7,704,000; **Lang:** French and native tongues; **Literacy:** 10% **Rel:** Islam and Tribal; **Currency:** Franc CFA. $ 1=Francs CFA 314,72; **per capita:** $ 420.

Senegal lies on the West African bulge. In the southern part of the country, Gambia forms a narrow enclave extending some 200 miles into the interior.

Formerly a French colony, Senegal became a self-governing republic in 1960. Agriculture and livestock rearing are the chief occupations. There are large deposits of iron ore and phosphate. Industries: food processing, chemicals and textiles.

President: Abdou Diouf.

Mission in India: Embassy of the Republic of Senegal, 30 Paschimi Marg, Vasant Vihar, New Delhi-110 057.

SEYCHELLES

Cap: Victoria; Area: 308 sq km; **Pop:** 70,000; **Lang:** Creole and French; **Literacy:** 80%; **Rel:** Christianity; **Currency:** Rupee. $1=Rupees 5.64; **per capita:** $ 3590.

Seychelles forms a group of lovely islands, in western Indian Ocean. The principal island is Mahe on which the capital Victoria is situated. The group consists of some 92 islands, of which 45 are coralline and the rest granitic. Seychelles became an independent republic in 1976.

Seychelles was entirely uninhabited when the French established settlements there in 1770.

The population of Seychelles is of mixed origin, a unique blend of European, African, Indian and Chinese races. The Seychelles have evolved a mixed language, which may be called Creole. Coconuts take the pride of place among agricultural products. Cinnamon, tea and lime grown. Fishing is a major occupation.

President: France Albert Rene.

SIERRA LEONE

Cap: Freetown; **Area:** 71,740 sq km; **Pop:** 4,318,000; **Lang:** English and Tribal; **Literacy:** 15%; **Rel:** Islam, Christianity and Tribal; **Currency:** Leone. $1=Leones 41.13; **per capita:** $ 310.

Sierra Leone (meaning mountain of the lion) was the name originally given to this area by Portuguese sailors mainly on account of the thunder-storms around its coastal peaks. It lies on the West African bulge, between Guinea and Liberia.

Formerly under British rule, Sierra Leone became independent in 1961.

The economy is based on agriculture and mining. Principal products are industrial diamonds, iron ore, bauxite, kola nuts, palm kernel, cocoa and coffee.

President: Maj. Gen. Dr. Joseph Saidu Momoh.

SINGAPORE

Cap: Singapore city; **Area:** 616.3 sq km; **Pop:** 2,700,000; **Lang:** Malay, Chinese, Tamil and English; **Literacy:** 85%; **Rel:** Buddism, Hinduism, Islam, Christianity and Taoism; **Currency:** Singapore Dollar. $1=S$ 1.93; **per capita:** $ 9455.

Singapore is a small island with some 54 outlying islets situated at the southern tip of the Malay peninsula, to which it is linked by a causeway. The island is about 41.84 km in length and 22.53 km in breadth. Attained independance in 1965.

The population of Singapore is composite. The Chinese comprise 76.5% and Malays 14.8% and Indians 6.4%.

The country is an entrepot for Malaysia and other southeast Asian states. The chief exports are rubber and tin. Industries include tin smelting, rubber, lumber and shipbuilding, textiles and electronics.

President: Wee Kim Wee, **P.M.:** Goh Chok Tong.

Mission in India: High Commission of the Republic of Singapore, E 6, Chandragupta Marg, Chanakyapuri, New Delhi-110 021. Tel: 604162.

Consulates: 94 Sakar Bhavan, 230 Nariman Point, Bombay-400 021; Tel: 2043205.

C/o Diners, 8A 2nd Floor, AJC Bose Road, Calcutta. Tel: 444990, 432300.

Apex Plaza, 3 Nungambakkam High Road, Madras-600 034. Tel: 473795, 476637, 476393.

SOLOMON ISLANDS

Cap: Honiara; **Area:** 29,758 sq km; **Pop:** 314,000; **Lang:** English and Pidgin English; **Literacy:** 54%; **Rel:** Christianity; **Currency:** Solomon Island Dollar (SI$). $1=SI$ 2.18; **per capita:** $ 530.

The Solomon Islands are in the South West Pacific and lie to the east of Papua Guinea. Originally a British Protectorate, it achieved independence in 1978.

The population is predominantly Melanesian. Copra is the main cash crop and rice the chief food crop. Fish is a vital element in food and an export item.

Gov. Gen: Sir George Lepping. **P.M.:** Ezekiel Alebua.

SOMALIA

Cap: Mogadishu; **Area:** 637,657 sq km; **Pop:** 8,552,000; **Lang:** Somali and Arabic; **Literacy:** 40%; **Rel:** Islam; **Currency:**

Somali Shilling. $1=Som. Sh. 244.99; **per capita:** $ 280.

A republic on the east coast of Africa, Somali Democratic Republic was formed by the union of the former Italian Somaliland and the British Somaliland on July 1, 1960.

Somalia is an agricultural country. But out of 8.2 m hectares of fertile land only 7 m hectares are cultivated. Has 40.1 m livestock.

President: Ali Mahdi Mohamed. **P.M.:** Lt. Gen. Mohammed Ali Samater.

Mission in India: Embassy of Somalia Democratic Republic, 176, Jor Bagh, New Delhi. Tel: 619277, 698551, 619559.

SOUTH AFRICA

Cap: Pretoria; **Area:** 1,221,037 sq km; **Pop:** 35,625,000; **Lang:** Afrikaans and English; **Literacy:** 99% (whites), 69% (Asians), 62%. (coloureds), (50% African); **Rel:** Christianity; **Currency:** Rand. $ 1=R 2.51; **per capita:** $ 1800.

The Republic of South Africa lies at the southern tip of the continent of Africa. S. Africa includes the original white colonies of the Cape of Good Hope, Natal, Transvaal and Orange Free State. Formerly known as the Union of South Africa, it became a republic after leaving the Commonwealth in March 1960.

The country adopted a policy of *Apartheid,* the separate development of racial groups. Under the Bantu Home Lands Constitution Act of 1971, self-government was given to Transkei, Bophuthatswana, Venda and Ciskei.

However, 1990 witnessed softening of the White's attitude towards the 26 million agitating blacks. The government lifted the ban on African National Congress and its leader 71-year old Nelson Mandela was released from prison after 27 years of confinement.

The major agricultural products are cotton, wheat, tobacco, sugarcane and citrus fruits. With vast mineral resources, South Africa is the biggest gold and diamond producing country in the world and one of the biggest producers of uranium. About 47 per cent of the world's total production of gold is from South Africa. Other minerals include coal, copper, tin, manganese, iron, lead and chrome. Manufacturing industries include heavy engineering, chemicals, textiles and food processing.

President and Prime Minister: F.W. De Klerk.

SPAIN

Cap: Madrid; **Area:** 504,750 sq km; **Pop:** 39,784,000; **Lang:** Spanish; **Literacy:** 97%; **Rel:** Christianity; **Currency:** Peseta. $1=Pesetas 115.40; **per capita:** $ 5198.

With the discovery of Amercia for Spain by Columbus in 1492, Spain became a great colonial empire. After the defeat of the Spanish Armada by England in 1588, Spain shrunk into a minor continental power. In 1939, it passed under the dictatorship of Gen. Franco. On Franco's death in 1975 Spain became a constitutional monarchy.

Traditionally an agricultural country, Spain's main products are cereals, vegetables and fruits. Industries include chemicals, machine tools and ship-building.

Head of State: King Juan Carlos; **P.M.:** Felipe Gonzales Marquez.

Mission in India: Embassy of Spain, 12 Prithviraj Road, New Delhi-110 011. Tel: 3015892.

Consulates: 6 Q Dubash Marg, Bombay-400 023; Phone: 244664.

1, Taratolla Road, Garden Reach, Calcutta-700 024. Tel: 451388.

Lovedale' 8, Nimmo Road, San Thome, Madras-600 004; Tel: 72008.

SRI LANKA

(See South Asia)

ST. KITTS-NEVIS

Cap: Basseterre; **Area:** 269 sq km; **Pop:** 40,000; **Lang:** English and Patois; **Literacy:** 90%; **Rel:** Christianity; **Currency:** East Caribbean Dollar, $1=EC$ 2.71; **per capita:** $1700.

St. Christopher (Kitts)-Nevis is two islands in East Caribbean separated by a narrow channel 3.2 km wide. The islands were given the status of an Associate State with Britain in 1967 and became independent on Sept. 18, 1983. At that time Anguilla was part of St. Kitts-Nevis. The Anguillans revolted against this arrangement and Anguilla was separated.

The population is mostly black. The economy is agricultural, sea island cotton and sugar cane being the principal crops.

Gov. Gen: Sir Clement Athelston Arrindell. **P.M.:** Dr. Kennedy Alphonse Simmonds.

ST. LUCIA

Cap: Castries; **Area:** 616 sq km; **Pop:** 128,000; **Lang:** English and French patois; **Literacy:** 78%; **Rel:** Christianity; **Currency:** East Caribbean Dollar, $1=EC$ 2.71; **per capita:** $ 1320.

St. Lucia, the second largest island in the Windward group, lies to the south of Martinique and to the north of St. Vincent. It became independent on Feb. 22, 1979.

The economy is agricultural, copra, coconut oil, bananas and cocoa being the main export items. Manufactures include plastics, garments and beer.

Gov. Gen: Sir Vincent Floissac; **P.M.:** John George Melvin Compton.

St. VINCENT

Cap: Kingstown; **Area:** 389 sq km; **Pop:** 112,000; **Lang:** English and French Patois: **Literacy:** 85%; **Rel:** Christianity; **Currency:** East Caribbean Dollar: $1=EC$ 2.71; **per capita:** = $960.

One of the Windward islands, west of Barbados, St. Vincent became a British Associate State in 1969 and achieved independence on Oct. 27, 1979.

The population is of mixed origin- European-Negro and Carib-Indian. Bananas, arrowroot, copra, sea island cotton and spices are the main exports. Tourism is important.

Gov. Gen: Henry Harvey Williams. **P.M.:** James Fitz Allen Mitchell.

SUDAN

Cap: Khartoum; **Area:** 2,505,813 sq km; **Pop:** 25,008,000; **Lang:** Arabic and English; **Literacy:** 20%; **Rel:** Islam, Christianity and Tribal; **Currency:** Sudanese Pound. $1=£S4.52; **per capita:** $ 330.

Sudan is a republic in north east Africa. The White Nile flows through the middle of the country and joins the Blue Nile at Khartoum. The Sudanese population consists of Arabs, Negroes and Nubians of mixed Arab and Negro blood. Sudan became an independent state in 1885.

The main agricultural crop sorghum is the country's staple food. Other products include longstaple cotton, sesame, peanuts, dates, hides and skins, chillies, beans and corn. Sudan is the world's principal source of gum arabic. Rice, peanuts, coffee, sugar cane and tobacco are expanding items of agricultural production. Sudan's mineral wealth includes copper, gold, iron, manganese and magnesite. Oil has also been found.

Head of State: Brig. Gen. Omar Hassan Ahmed at-Bashir.

Mission in India: Embassy of Sudan, M14, South Extension 11, New Delhi - 110049. Tel: 660434.

SURINAME

Cap: Paramaribo; **Area:** 163,820 sq km; **Pop:** 400,000; **Lang:** Dutch; also Hindi, Sranantango and Javanese; **Literacy:** 65%; **Rel:** Christianity, Hinduism and Islam; **Currency:** Suriname Guilder. $1=S. Guilders 1,79; **per capita:** $ 2510.

Suriname, formerly Dutch Guyana, lies on the north east coast of South America. It became independent in 1975.

The population comprises a medley of ethnic strains. The most important groups are Negroes/Mulattoes and East Indians (Hindustani), both more than 1/3 of the population. Other groups: Indonesians, Chinese, Lebanese and Amer-Indians.

The economy is very dependent on exports and imports. Much of the land is given to rice cultivation, managed by Hindustani. The country is rich in bauxite. Nowadays it produces 5% of the world production. Bauxite, alumina and aluminium constitute nearly 80% of the exports.

President: Johan Kraag. **P.M.:** Henck Arron.

SWAZILAND

Cap: Mbabane; **Area:** 17,363 sq km; **Pop:** 757,000; **Lang:** English and si-Swati; **Literacy:** 65%; **Rel:** Christianity and Tribal. **Currency:** Emalangeni. $1=Emalangeni 2.51; **per capita:** $ 730.

Swaziland is surrounded almost entirely by South Africa. Mozambique to the east is its only other neighbour.

Swaziland, formerly a British protectorate, attained independence on Sept. 6, 1968.

Sugar is the principal item in the economy, with citrus fruits, cotton, rice and maize, coming next. But the main wealth of the Swazis is cattle. There are considerable mineral reserves, especially, asbestos, iron and coal.

Head of State: King Mswati III. **P.M.:** Obed Dlamini.

SWEDEN

Cap: Stockholm; **Area:** 449,793 sq km; **Pop:** 837,000; **Lang:** Swedish; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Krona. $1=Krona 6.35; **per capita:** $ 18607.

Sweden is the largest of the Nordic countries and in terms of area, the fourth largest country in Europe. In the west, the Scandinavian mountain range separates Sweden from Norway. To the northeast, a shorter range separates Sweden from Finland. Otherwise, Sweden is surrounded by water-Baltic Sea and the North Sea. A constitutional monarchy since 1434.

Sweden has rich natural supplies of coniferous forest, water power, iron ore, uranium and other minerals but lacks significant oil and coal deposits.

The country is highly industrialised. Today about 40 per cent of the country's industrial production is exported. Swedish steel is especially reputed for tool making. Sweden is one of the greatest producers of wood pulp, paper and lumber.

Head of State: King Carl XVI Gustav. **P.M.:** Carl Bildt.

Mission in India: Embassy of Sweden, Nyaya Marg, Chanakyapuri, New Delhi-110 021. Tel: 604961.

Consulate General: Indian Mercantile Chambers, R Kamani Marg, Bombay-400 038; Phone: 262583, 269483.

6 Poonam Building, 5/2 Russell St, Calcutta. Tel: 213621, 212543.

Hon. Consul, 6, Cathedral Road, Madras-600 086; Phone: 475792, 472040.

SWITZERLAND

Cap: Berne; **Area:** 41,293 sq.km.; **Pop:** 6,485,000; **Lang:** German, French, Italian and Romansch; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Swiss Franc. $1 = Swiss Francs 1.58; **Per capita:** 17,840.

Switzerland, a Confederation in Central Europe is a mountainous country, with the Alpine ranges rising from its bosom. The country is famous for its lakes.

Since 1291 Switzerland has remained a completely independent country. It is a multilingual state with most people talking more than one language.

The Swiss terrain offers little scope for farming. Nevertheless, a number of small efficient farms operate and keep the farming community going. The emphasis is on livestock raising and dairying. Forests help by providing plenty of wood. From the earliest times Switzerland has been famous for its cottage industries-high quality products but no large-scale production.

Swiss-made watches and clocks are famous the world over. Precision tools and machines form another specialised industry. The availability of electric power in every cottage has fostered growth of all kinds of small industries throughout Switzerland. Tourism is the third most paying industry. India has always been one of the major recipients of Swiss assistance, specially in the areas of cattle breeding, rural development, vocational training and in various fields of applied research.

President of the Confederation for 1991: Flavio Cotti.

Mission in India: Embassy of Switzerland, Nyaya Marg, Chanakyapuri, New Delhi - 110021. Tel: 604225.

Consulate: Manak Mahal, 7th Floor, 90 Vir Nariman Road, Bombay-400 020. Tel: 2042591, 2043550.

SYRIA

Cap: Damasucs; **Area:** 185,180 sq.km.; **Pop:** 12,210,000; **Lang:** Arabic: **Literacy:** 78%

(males); **Rel:** Islam; **Currency;** Syrian Pound. $1 = £Syr. 21.08; **Per capita:** $ 2000.

The Syrian Arab Republic in the middle east lies in between Turkey, Iraq, Jordan, Palestine and Lebanon. The Mediterranean Sea is on the west. The Orontes and Euphrates rivers pass through Syria. The chief seaport is Latakia.

Syria, the seat of an ancient civilization became a fully independent sovereign republic in 1946.

Agriculture and cattle-breeding comprise the major occupations of the people. The chief crops are cotton, wheat, tobacco and olives. The only mineral found is oil. Industries include oils, soap, textiles, leather and tobacco.

President: Lt. Gen. Hafez al-Assad. **P.M.:** Mahmoud Zubi.

Mission in India: Embassy of Syrian Arab Republic, 28 Vasant Marg, Vasant Vihar, New Delhi - 110057. Tel: 670233.

Consulate General: 3rd Floor, Cambatta Building, Sir Jamshedji Tata Road, Bombay-400 020; Phone: 221999.

TAIWAN

Cap: Taipei; **Area:** 35,981 sq.km.; **Pop:** 20,454,000; **Lang:** Mandarin Chinese; **Literacy:** 90%; **Rel:** Buddhism and Confucianism; **Currency:** New Taiwan Dollar. $1 = NT $27.88; **per capita:** $6051.

Taiwan, formerly known as Formosa, includes not only Taiwan proper, but also a number of small islands.

Originally Taiwan and adjoining areas were Chinese territory. In 1950 Chiang Kai Shek made Taiwan the headquarters of the Nationalist Republic of China. Although Taiwan still claims to be the legal government of all China it lost its membership in the UN and its permanent seat in the Security Council to Communist China in 1971.

The main agricultural products are rice, tea, sugar, sweet potatoes, ramie, jute and turmeric. Camphor secured from forests is a government monopoly. Industries comprise cotton fabrics and electrical goods, iron works, glass and soap. Coal, marble, petroleum and natural gas are the principal minerals.

President: Lee Teng - Hui. **P.M.:** Hau Pei - Tsun.

TANZANIA

Cap: Dodoma; **Area:** 945,087 sq.km.; **Pop:** 24,746,000; **Lang:** Kiswahili and English; **Literacy:** 85%; **Rel:** Christianity and Islam; **Currency:** Shilling. $1 = Sh. 190; **per capita:** $ 240.

Tanzania in East Africa consists of Tanganyika and the islands of Zanzibar and Pemba. The islands of Zanzibar and Pemba are about 40 km off the coast, north of Dar-es-Salaam.

In April 1964, the People's Republic of Zanzibar and Pemba and the Republic of Tanganyika merged to form the United Republic of Tanzania.

The economy is agricultural. The chief cash crops are sisal, sugarcane, cotton and coffee. Cloves are grown on the islands, chiefly in Pemba. Livestock is extensively raised. Diamonds are an important export. Other minerals include gold, tin and salt.

President: Ndugu Ali Hassan Mwinyi. **P.M.:** John Mabcela.

Mission in India: High Commission of Tanzania, 27 Golf Links, New Delhi - 110003. Tel: 694351.

THAILAND

Cap: Bangkok; **Area:** 542,373 sq.km.; **Pop:** 56,000,000; **Lang:** Thai; **Literacy:** 89%; **Rel:** Buddhism and Islam; **Currency:** Baht. $1 = Bahts 25.57; **Per capita:** $ 995.

Thailand, formerly known as Siam, is a constitutional monarchy in southeast Asia.

An ancient autocracy, it became a constitutional monarchy in 1932. In 1948 the country assumed its present name Thailand.

Agriculture is the mainstay of the country and engages 60 per cent of the population. The chief crop is rice, much of which is exported. Coconuts, tobacco, cotton and teak are the other items of agricultural exports. During the last decade Thailand increased her export to manufactured and processed items. Minerals include tin, manganese, tungsten, antimony, lignite and lead. Tourism is highly developed.

Head of State: King Bhumibol Adulyadej Abldet. Caretaker **P.M.:** Anand Panyarachun.

Mission in India: Embassy of Thailand, 56-N, Nyaya Marg, Chanakyapuri, New Delhi - 110021. Tel: 605679.

Consulates General: 90, Krishna Bagh, 2nd Floor, 43, B. Desai Road, Bombay-400 026; Tel: 8226404, 8226417.

90, Mandevilla Gardens, Ballygunge, Calcutta-700 019. Tel: 460836.

TOGO

Cap: Lome; **Area:** 56,600 sq.km.; **Pop:** 3,423,000, **Lang:** French (official) and Tribal; **Literacy:** 45% (males); **Rel:** Tribal and Christianity; **Currency:** Franc CFA. $1 = F CFA 314.72; **Per capita:** $ 250.

The Republic of Togo, formerly Togoland, lies on the west coast of Africa forming a narrow strip stretching from the Gulf of Guinea north to Burkina Faso. Togo became independent in 1960.

The principal products are coffee, cocoa, cotton, palm kernels, kapok and groundnuts. Togo's considerable natural resources are still largely undeveloped but phosphates are being mined in increasing quantities, and now form the country's principal export.

President: Gen. Gnassingbe Eyadema.

TONGA

Cap: Nuku'alofa; **Area:** 748 sq.km.; **Pop:** 108,000; **Lang:** English and Tongan; **Literacy:** 93%; **Rel:** Christianity; **Currency:** Pa'anga. $1 = Pa'anga 1.23; **Per capita:** $ 580.

Tonga consists of 169 islands and islets in the south western Pacific Ocean. The Tropic of Capricorn and the International Dateline cross each other very near Tonga.

Tonga became a British-protected state in 1990 and independent on June 4, 1970.

Tonga is an agricultural country. Vegetables and fruits are grown for local consumption. Copra and bananas exported.

Head of State: King Taufa 'ahau Topou IV. **P.M.:** Prince Fatafehi Tu 'pelehake.

Mission in India: Consulate of Tonga, C/o. G.P. (P) Ltd., 17, Chittaranjan Ave, Calcutta - 700072. Tel: 27-3568.

TRINIDAD AND TOBAGO

Cap: Port-of-Spain; **Area:** 5128 sq.km.; **Pop:** 1,261,000; **Lang:** English; **Literacy:** 96%; **Rel:** Christianity; **Currency:** Tri & Tob Dollar. $1 = TT $4.27; **Per capita:** $ 5120.

Trinidad, the second largest and most southerly of the West Indian islands (south of Windward Isles) lies very near the north coast of South America. Attached to it for administrative purposes is the island of Tobago. Tobago is often called Robinson Crusoe Island in the belief that this was the island on which Crusoe was stranded. It is just 32 km from Trinidad. Tobago is famous for its rich avian fauna.

Formerly a British Colony, achieved independence in 1962 and became republic in 1976.

Industries include oil processing, manufactured goods and tourism. Chief crops are sugarcane, citrus fruit and cocoa.

President: Noor Hassanali. **P.M.:** Winston Dookeran.

Mission in India: High Commission of Trinidad and Tobago, 131 Jor Bagh, New Delhi - 110003. Tel: 618186.

TUNISIA

Cap: Tunis; **Area:** 164,150 sq.km.; **Pop:** 7.930.000; **Lang:** Arabic (official) and French; **Literacy:** 46%; **Rel:** Islam; **Currency:** Dinar. $1 = 0.94; **Per capita:** $ 1300.

A republic in North Africa, lying on the Mediterranean coast and formerly a French protectorate, Tunisia became autonomous in 1955, and assumed republican status in 1957.

Tunisia is an agricultural country, and produces wheat, barley, oats, dates, olives, apricots, almonds, figs, peaches, vegetables and alfa grass. The chief minerals are phosphates, iron, lead and zinc. The principal exports are olive oil, wine, phosphates and grains.

President: Gen. Zine el Abidine Ben Ali. **P.M.:** Hamed Karoui.

Mission in India: Embassy of Tunisia, 23-Palam Marg, Vasant Vihar, New Delhi - 110057. Tel: 676204.

TURKEY

Cap: Ankara; **Area:** 779,452 sq.km.; **Pop:** 53,900,000; **Lang:** Turkish; **Literacy:** 70%; **Rel:** Secular, main religion Islam; **Currency:** Turkish Lira. $1 = TL 1957; **Per capita:** $ 1210.

A republic in south eastern Europe and Asia Minor, Turkey occupies a strategic position, linking as it does Asia and Europe at the Straits of Bosporus, between the Mediterranean and the Black Sea. The major portion of Turkey lies in Asia Minor.

Asiatic Turkey, that is, Anatolia, was the seat of one of the earliest civilizations known. Istanbul, the largest city, was first known as Byzantium and then as Constantinople. The Ottoman Turks conquered Consantinople in 1453 and founded a Turkish Empire. In 1923 Turkey became a republic.

Agriculture maintains about 64 per cent of the population. The chief products are tobacco, wheat, cotton, olive oil and sugar. Turkey is the world's second largest producer of sultana raisins. Sheep and cattle abound in the plateau of Anatolia and provide mohair for which Turkey is famous. The main minerals are iron ore, copper, chromium, bauxite and coal.

President: Turgut Ozal.

Mission in India: Embassy of Turkey, Plot 14, No. 50, Nyaya Marg, Chanakyapuri, New Delhi - 110021. Tel: 601921.

Consulates General: Mittal Court, C Wing, 10th Floor, Room No. 105, Nariman Point, Bombay-400 020; Tel: 240992.

2 Nazar Ali Lance, Ballygunge, Calcutta - 700029. Tel: 456045.

Lingichetty Lane, Madras. Tel: 25756, 510214.

TUVALU

Cap: Funafuti; **Area:** 26 sq.km.; **Pop:** 9000; **Lang:** Tuvaluan, English; **Literacy:** 96%; **Rel:** Christianity; **Currency:** Australian Dollar. $1 = A$ 1.23; **Per capita:** $ 500.

Formerly known as the Elice Islands, Tuvalu is a scattered group of nine small atolls in the Western Pacific Ocean, north of Fiji and east of Solomon Islands. It became independent in 1975 under the name Tuvalu.

The poor quality of the soil permits subsistence farming of coconuts only. Copra and postage stamps are the main foreign exchange earners.

Gov. Gen.: Tupua Leupena. **P.M.:** Dr. Tomasi Puapua.

UGANDA

Cap: Kampala; **Area:** 241,139 sq.km.; **Pop:** 16,811,000; **Lang:** English and Luganda; **Literacy:** 52%; **Rel:** Tribal and Islam; **Currency:** Uganda Shilling. $1 = U Sh. 165.45; **Per capita:** $ 230.

Uganda is an equatorial state in East Africa. Formerly a British protectorate, Uganda became independent in 1962 and a republic in 1963. A military coup led by Lt. Gen. Tito Okello ousted Milton Obote's Govt. in 1985. Milton Obote had himself come to power after ousting dictator Idi Amin in 1979.

The economy is agricultural. Main products are cotton and coffee. Tea, sugar, vegetable oils, oil seeds, hides, skins and tobacco are exported. Copper is the chief mineral.

President: Yoweri Museveni. **P.M.:** Dr. Samson B. Kisekka.

Mission in India: High Commission of Uganda, 61 Golf Links, New Delhi - 110003. Tel: 693584.

UNITED ARAB EMIRATES

Cap: Abu Dhabi; **Area:** 82,880 sq.km.; **Pop:** 1,455,000; **Lang:** Arabic; **Literacy:** 56%; **Rel:** Islam; **Currency:** Dirham. $1 = Dirham 3.68; **Per capita:** $ 14,410.

The United Arab Emirates consist of seven Sheikdoms in the Persian Gulf-Abu Dhabi, Dubai, Sharjah, Umm al Quwain, Ajman, Fujairah and Ras al Khaimah. The first six Sheikdoms signed the Union agreement on 2nd Dec., 1971. Ras al Khaimah joined the Union in February 1972.

Abu Dhabi, which is the capital of the Union, is the largest of the Emirates in area. Dubai is the main port of the Union and now has the largest harbour in the Middle East. The economy of UAE is almost entirely dependent on oil.

President: Sheik Zaid Ibn Sultan al Nahayan (of Abu Dhabi). **Vice President and P.M.:** Sheik Rashid bin Said al-Maktoum (of Dubai).

Mission in India: Embassy of UAE, A-7, West-End Colony, Rao Tula Ram Marg, New Delhi - 110021. Tel: 670830, 670945.

Consulate: Bungalow No. 7, Jolly Maker Apartment, Cuffe Parade, Colaba, Bombay-400-005.

UNITED KINGDOM

Cap: London; **Area:** 244,108 sq km; **Pop:** 56,648,000; **Lang:** English; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Pound Sterling. $1=£0.58; **per capita:** $ 8920.

A constitutional monarchy, the United Kingdom comprises the island of Great Britain and Northern Ireland, together with many small islands. It is separated from the coast of Western Europe by the English Channel to the south and by the North Sea to the east. The northern and western shores are washed by the Atlantic Ocean.

Great Britain is the largest of the islands forming the United Kingdom. It comprises England, Scotland, Wales, the Isle of Man and the Channel Islands. St. George's Channel and the Irish Sea lie between the UK and Ireland. Britain is much less than half the size of France or Germany and would fit forty times into the United States of America. Yet, for hundreds of years this island has been a world power. From its shores men set out to lay the foundation of what is now the United States of America and to develop Canada, Australia, New Zealand, the Indian continent and great areas of Africa. British institutions and methods of government have set the pattern for lovers of freedom everywhere. And today, Britain's Queen is the Head of a family of several million people, spread all over the world.

Great Britain is a constitutional monarchy. The sovereign is the Head of State and monarchy is hereditary. Actual power is vested in Parliament which is the supreme legislative body in Great Britain. The Parliament consists of two houses- the House of Lords and the House of Commons.

Britain is one of the world's leading industrial and exporting countries. Chief industries are iron and steel, engineering, chemicals, electronics, motor vehicles, aircraft, textiles, cloth and other consumer goods. Its coal mines yield about 128 million tons annually. Although Britain's agriculture and trawler-fishing are highly mechanised, half of the country's food supplies and most of its raw materials are imported. North Sea oil is a lately added boon to British economy.

Northern Ireland is situated in the northeast of Ireland and forms part of the United Kingdom. It comprises six Ulster countries of Antrim, Down, Fermanagh, Londonderry and Tyrone. The rest of the island forms the Republic of Ireland. Northern Ireland has been rocked by bloody agitation for union with Catholic Irish Republic. 1985 saw an Anglo-Irish agreement which for the first time gave Dublin a say in the running of the province.

Agriculture is the main occupation in Northern Ireland. Cattle, sheep, hogs, eggs, poultry, potatoes and milk are the important products. Linen, ropes, twines, rayon, clothing, tobacco, aircraft and shipping form the main branches of industry.

Head of State: Queen Elizabeth II, **P.M.:** John Major.

Mission in India: British High Commission, Shantipath, Chanakyapuri, New Delhi-110 0231. Tel: 601371.

Dy High Commissions: Hong Kong Bank Building, M.G. Road, Bombay-400 023. Tel: 274874.

1, Ho Chi Minh Sarani, Calcutta-700 071. Tel: 44-5171.

Hon. Consul: 24, Anderson Road, Madras-600 006. Tel: 473136.

UNITED STATES

Cap: Washington D.C.; **Area:** 9,372,614 sq.km.; **Pop:** 249,100,000; **Lang:** English; **Literacy:** 99%; **Rel:** Christianity; **Currency:** Dollar. **Per capita:** $ 19,750.

The United States of America is a federal republic composed of 50 states, of which all except one - Hawaii islands - are in mainland America.

The United States of America, which covers the central part of North America, grew out of the British colonies that were established in North America in the first half of the 17th century.

USA's participation in the First World War and the victory of the Allies made it a world power. The end of the Second World War saw the emergence of USA as one of the super-powers of the world.

The Union originally comprised 13 states, to which 7 were added subsequently. Thirty other states, which were formerly territories, were also admitted into the Union as full states, thus making up 50 states in all, apart from the District of Columbia. Each state has its own constitution. The State constitutions provide for a legislature of two Houses, (except Nebraska which has only one House) a Governor and a Judicial system of its own. The state governments can deal with all matters which are not reserved for the federal legislature. The following table gives the existing states of the Union with their postal abbreviations, capitals, area and population.

States of the Union

Name	Capital	Area (sq km)	Population (1980)
Alabama (AL)*	Montgomery	133916	3893888
Alaska (AK)	Juneau	1530700	401851
Arizona (AZ)	Phoenix	295260	2718425
Arkansas (AR)	Little Rock	137754	2286435
California (CA)	Sacramento	411049	23667565
Colorado (CO)	Denver	269596	2889735
Connecticut (CT)	Hartford	12997	3107576
Delaware (DE)	Dover	5294	594317
District of Columbia (DC)	Washington D.C	179	638432
Florida (FL)	Tallahassee	151940	9746342
Georgia (GA)	Atlanta	152577	5463105
Hawaii (HI)	Honolulu	16760	964691
Idaho (ID)	Boise	216431	944038
Illinois (IL)	Springfield	145934	11426596
Indiana (IN)	Indianapolis	93719	5490260
Iowa (IA)	Des-Moines	145752	2913808
Kansas (KS)	Topeka	213097	2364236
Kentucky (KY)	Frankfort	104659	3660257
Louisiana (LA)	Baton Rouge	123678	4206312
Maine (ME)	Augusta	86156	1125027
Maryland (MD)	Annapolis	27091	4216975
Massachusetts (MA)	Boston	21456	5737037
Michigan (MI)	Lansing	151585	9262078
Minnesota (MN)	St. Paul	218601	4075970
Mississippi (MS)	Jackson	123515	2520638
Missouri (MO)	Jefferson city	180515	4916759
Montana (MT)	Helena	380849	786690
Nebraska (NE)	Lincoln	200349	1569825
Nevada (NV)	Carson City	286353	800493
NewHampshir (NH)	Concord	24033	920610
New Jersey (NJ)	Treton	20168	7364823
New Mexico (NM)	Santa Fe	314923	1302981
New York (NY)	Albany	127190	17558072
North Carolina(NC)	Raleigh	136413	5881813
North Dakota (ND)	Bismarck	183118	652717
Ohio (OH)	Columbus	107045	10797624
Oklahoma (OK)	Oklahoma City	181186	3025290
Oregon (OR)	Salem	251419	2633149
Pennsylvania (PA)	Harrisburg	117348	11863895
Rhode Island (RI)	Providence	3139	947154
South Carolina(SC)	Columbia	80583	3121833
South Dakota (SD)	Pierre	199730	690768
Tennessee (TN)	Nashville	109153	4591120
Texas (TX)	Austin	691030	14229288
Utah (UT)	Salt Lake City	219888	1461037
Vermont (VT)	Montpelier	24900	511456
Virginia (VA)	Richmond	105587	5346818
Washington (WA)	Olympia	176480	4132180
West Virginia(WV)	Charleston	62758	1950279
Wisconsin (WI)	Madison	145436	4705521
Wyoming (WY)	Cheyenne	253325	469557

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*Postal two-letter (both capitals) abbreviations for U.S. states were introduced with the ZIP Code in 1963. These are fast replacing the older abbreviations.

Territories and other outlying areas

Place	Area (sq km)	Population
Puerto Rico	9104	3187570[1]
Virgin Islands, U.S	342	95591[1]
Guam	541	105821[1]
American Samoa	199	32395[1]
Canton Island and Enderbury Island	70	0
Midway Islands	5	2256[2]
Wake Island	8	1647[3]
Johnston Island and Sand Island	1.3	378[4]
Northern Mariana Islanes	477	16758[5]
Trust Territory of the Pacific Islands	1380	126000[5]

1980 census. [2]1975 est. [3]1970 census. [4]1978 est. [5]1980 est.

President: George Herbert Walker Bush.

Mission in India: Embassy of USA. Shantipath, Chanakyapuri, New Delhi - 110021. Tel: 600651.

Consulates: Lincoln House, 78 Bhulabhai Desai Road, Bombay - 400026; Tel: 8223611.

5/1 Ho Chi Minh Sarani, Calcutta - 700071. Tel: 44-3611.

220, Annasalai, Madras - 600006. Tel: 473040.

USSR

(See Topic of the Year)

URUGUAY

Cap: Montevideo; **Area:** 176,215 sq.km.; **Pop:** 2,983,000; **Lang:** Spanish; **Literacy:** 96%; **Rel:** Christianity; **Currency:** Nuevo Peso. $1 = 489.99 NP; **Per capita:** $ 1860.

Uruguay is the smallest republic in South America. It lies on the north bank of the estuary of the River Plate with Brazil to the north and Argentina to the west.

Uruguay, once a part of the Spanish Empire and later a province of Brazil, became independent in 1825.

Livestock-raising is Uruguay's prinicipal occupation and takes up 60 per cent of its total land area. The chief products are meat, wool, hides, corn, wheat, citrus fruit, rice, tobacco, oats and linseed. Important industries are vinery, meatpacking and textiles.

President: Luis Lacalle.

VANUATU

Cap: Villa; **Area:** 14,760 sq km; **Pop:** 150,000; **Lang:** English, Pidgin; **Literacy:** 85-90% children attend primary schools. **Rel:** Christianity; **Currency:** Vatu. $1=Vatu 105.36; **per capita:** $350.

New Hebrides became independent under the name Vanuatu on July 1, 1980. It is a double chain of 13 large and 80 small islands in the Pacific. The largest island is the Espirtu Santo. Originally a haunt of European pirates, they came under the control of France and Britain in 1906.

The population is overwhelmingly Melanesian. The major cash crops are copra, coffee and cocoa. Piggery is well developed. Manganese has been mined since 1961 and exported to Japan.

President: Fred Timakata; **PM:** Walter Hadye Lini.

VATICAN CITY

Cap: Vatican City; **Area:** 0.4 sq km; **Pop:** about 1000; **Lang:** All languages accepted; **Rel:** Christianity: Catholic. **Currency:** Lira; $1=Lire 1361.

Vatican City, the City of the Pope, is an independent sovereign state and includes St. Peter's Cathedral, Vatican Palace and Museum, the Vatican Gardens and neighbouring buildings. Vatican has its own railway station, postal system and police.

Supreme Pontiff: Pope John Paul II (Karol Wojtyla). **Secretary of State:** Cardinal Agostino Casaroli.

Mission in India: Apostolic Nunciature, 50-C, Nitimarg, Chanakyapuri, New Delhi-110 021. Tel: 606921.

VENEZUELA

Cap: Caracas; **Area:** 912,050 sq km; **Pop:** 19,246,000; **Lang:** Spanish; **Literacy:** 88%; **Rel:** Christianity; **Currency:** Bolivar, $1=Bolivar 39.58; **per capita:** $ 2930.

Venezuela (sixth largest country in South America) is the northernmost state of South America. Formerly a Spanish colony, Venezuela (Little Venice) became independent in 1821.

Venezuela is rich in minerals. It is one of the world's leading producers of oil and is a member of the OPEC. Oil prosperity is evident everywhere. Venezuela is rich in diamonds and ranks 8th in world production. Other minerals are iron, steel, aluminium, copper, tin and manganese. Agricultural products include coffee, cocoa, black beans, bananas, maize, rice and sugar.

President: Carlos Andres Perez Rodriquez.

Mission in India: Embassy of Venezuela, N-114, Panchashila Park, New Delhi-110 017. Tel: 6436783.

VIETNAM

Cap: Hanoi; **Area:** 329,566 sq. km; **Pop:** 68,700,000; **Lang:** Vietnamese; **Literacy:** 94%; **Rel:** Taoism and Buddhism; **Currency:** Dong. $1=Dong 3313; **per capita:** 130.

The Socialist Republic of Vietnam (comprising former North and South Vietnam) is a mountainous country. Running almost its entire length, is a mountain chain–the Annamite Chain. On one side of the mountain chain is the fertile Red River delta in the north and on the other side is the Mekong delta in the south. The two deltas form the rice bowl of the country.

The country is primarily agricultural. Rice is the dominant crop and an export item. Other crops are rubber, sugarcane, coffee and tea. Minerals include coal, tin, copper, chromium and phosphate in the north. Industries like cement, metallurgy, chemicals, paper and textiles are found in the south.

President: Vo Chi Cong; **P.M.:** Vo Nguen Giap; **Gen. Sec. Comm. Party:** Nguen Van Linh. **P.M.:** Vo. Van Kiet.

Mission in India: Embassy of Vietnam, No. 2, Navjeevan Vihar, New Delhi-110017. Tel: 669843.

Vietnam is Third Largest Rice Exporter

Vietnam emerged as the world's third largest rice exporter last year after a 40-year hiatus, the U.S. agriculture department reports.

It said Vietnam exported 1.4 million metric tons of rice in 1989, reflecting increased output prompted in part by the government decision to give farmers long-term tenure on their land.

Fewer export controls, privatisation of trade, and competitive pricing also contributed to Vietnam's emergence as largest rice exporter after Thailand and the United States, the department said.

Major destinations for Vietnamese rice include Cote D'Ivoire, India, China, Iran and Peru.

Vietnam's rice exports this year are expected to reach 2 million metric tons.

The department predicted that world rice trade would total 12.73 million metric tons in 1990 and 13.01 million metric tons in 1991, down from 15.17 million metric tons in 1989.

WESTERN SAMOA

Cap: Apia; **Area:** 2835 sq km; **Pop:** 169,000; **Lang:** Samoan and English; **Literacy:** 90%; **Rel:** Christianity: **Currency:** Tala, $1=Tala 2,17; **per capita:** $ 770.

Western Samoa comprises four islands in the South Pacific Ocean, the largest of them being Savaii and Upolu. The International Dateline passes very near Western. Samoa. Eastern Samoa (American Samoa) with its capital at Fagotogo remains a dependency of the USA.

Western Samoa became fully independent on January 1, 1962 and is a member of the Commonwealth.

The economy is mainly agricultural. The chief products are fish, copra, bananas, taro, sweet potatoes, bark cloth and mats.

Head of State for life: Malietoa Tanumafili II. **P.M.:** Tofilau Eti Alesana.

YEMEN

Cap: Sana'a; **Area:** 658575 sq km; **Pop:** 12,000,000. millions; **Lang:** Arabic; **Literacy:** 30%; **Rel:** Islam; **Currency:** Rial/Dinar; **per capita:** $ 410.

North and South Yeman merged in May 1990 into a United Republic of Yemen in the south west of the Arabian peninsula. North Yemen was established in 1962 while South Yemen (formerly Aden and the Protectorate of South Arabia) became independent in 1967.

Centuries ago it was a rich land of exotic spices, frankincense and myrrh. The legendary Queen of Sheba ruled the kingdom then known as Happy Yemen. However, South Yemen become the Arab world's only Marxist nation after independence from Britain in 1967.

The economy is chiefly based in oil and agriculture. The main agricultural products are coffee, dates, herbs, fruits, millet and maize. Cotton, coffee, hides and skins are exported.

President: Col. Ali Abdullah Saleh (North Yemen). **Vice President:** Ali Salem al Beidh (South Yemen).

Mission In India: Embassy of the Republic of Yemen, B-55, Parchimi Marg, Vasant Vihar, New Delhi-110 057, Tel: 674472.

Consulate: 102 Maker Tower, "F' 10th Floor, Cuffe Parade, Bombay.

YUGOSLAVIA

Cap: Belgrade; **Area:** 255,804 sq km; **Pop:** 23,753,000. **Lang:** Serbo-Croatian, Slovian and Macedonian; **Literacy:** 90%; **Rel:** Christianity and Islam. **Currency:** Dinar $1=Dinar 7133; **per capita:** $2300.

Yugoslavia, a Balkan state, is made up of six republics–Serbia, Croatia, Slovenia, Montenegro, Bosnia-Herzegovina and Macedonia.

After 45 years of Communism, Yugoslavia moved towards democracy but in 1990, rebellious republics endangered federal unity.

The modern state of Yugoslavia has grown out of a petty principality Serbia which was independent since 1878.

Nearly one-third of Yugoslavia is forest. The chief crops are wheat, maize and potatotes. The principal minerals are coal, iron, manganese and lead.

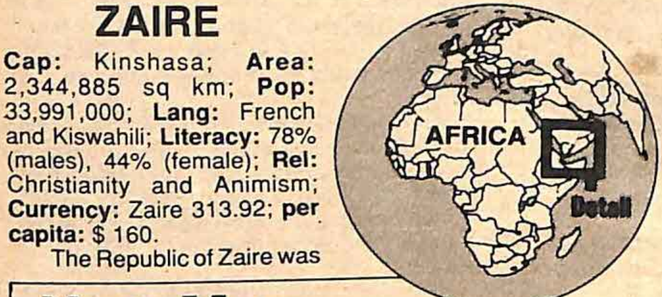
President: Borisar Jovic. **PM:** Ante Markovic.

MIssion in India: Embassy of Yugoslavia, 3/50 Niti Marg, Chanakyapuri, New Delhi-110 021. Tel: 606022.

Trade Commission: Vaswani Mansions, 120/4 Dinsha Vachha Road, Bombay.

ZAIRE

Cap: Kinshasa; **Area:** 2,344,885 sq km; **Pop:** 33,991,000; **Lang:** French and Kiswahili; **Literacy:** 78% (males), 44% (female); **Rel:** Christianity and Animism; **Currency:** Zaire 313.92; **per capita:** $ 160.



The Republic of Zaire was known until Oct. 1971 as the Democratic Republic of Congo, or Congo (Kinshasa) for short. This change of name distinguished it from its neighbour, the Republic of the Congo or the Congo (Brazzaville). In 1971, the country changed the name of River Congo to River Zaire. Originally a Belgian colony, Zaire became independent on June 30, 1960.

The major assets of Zaire are the Katanga copper mines and the diamond deposits in Kasai. The country is rich in other minerals like cobalt, cadmium, manganese, zinc and uranium. The forests abound in high class wood like mahogany, ebony and teak. Principal agricultural products are coffee, palm oil and rubber.

President: Mobutu Sese Seko. **P.M.:** Lunda Bululu.

Mission in India: Embassy of Zaire, 160 Jor Bagh, New Delhi-110003. Tel: 619455.

ZAMBIA

Cap: Lusaka; **Area:** 752,620 sq km; **Pop:** 7,770,000; **Lang:** Bantu and English; **Literacy:** 54%; **Rel:** Christianity and Islam; **Currency:** Kwacha. $1=Zks 10.02; **per capita:** $300.

Zambia, a landlocked republic in southern Africa, takes its name from the River Zambezi, one of its biggest rivers. Originally known as Northern Rhodesia, it is separated from Zimbabwe by the Zambezi river. Kariba Dam, one of the biggest man-made dams in the world, is on the Zambezi river where it makes the border between Zambia and Zimbabwe.

Zambia became independent on 24th October, 1964 and it is a republic within the Commonwealth.

Maize, tobacco, millet, cassava, groundnuts, cotton and sugar are produced.

The country is rich in minerals including copper, zinc, cobalt, lead, uranium and manganese. Although copper mining dominates Zambia's economy, now accounting for 80% of the foreign exchange earnings, the country made a major shift to agricultural production, as a result of the crippling fluctuations of copper prices in the world market.

President: Dr. Kenneth David Kaunda; **P.M.:** Gen. Maalimba Masheke.

Mission in India: High Commission of Zambia, 14 Jor Bagh, New Delhi-110 003. Phone: 619329, 619294, 619115.

ZIMBABWE

Cap: Harare; **Area:** 390,272 sq km; **Pop:** 9,987,000; **Lang:** English, Shona and Ndebela; **Literacy:** 50%; **Rel:** Tribal and Christianity; **Currency:** Dollar. $1= 1.99; **per capita:** $ 780.

Zimbabwe, formerly Southern Rhodesia, lies in south central Africa. Zimbabwe achieved independence after a bitter struggle against the white minority government in power.

Zimbabwe is rich in minerals notably copper, nickel, gold, asbestos, chrome and coal. The Wankie Colliery is the largest coal mine in the world. Industries include food processing, metals, textiles and engineering. Maize, groundnuts, cotton and tobacco are the chief crops, tobacco being the most important one.

Executive President: Robert G. Mugabe.

Mission in India: High Commission for the Republic of Zimbabwe, B-1/42, Safdarjung Enclave, New Delhi-110 029. Tel: 608598.

GREAT CIVILIZATIONS

Civic society or organized socio-political civilization first took shape within a narrow geographical compass that covered Egypt in the west, Indus Valley in the east, Anatolia (Asia Minor) in the north, and Sumeria (Iraq & Iran) in the south.

Civilization radiated outwards from these centres, reaching the Mediterranean sea board and the islands in the west, and China in the east, around 2000 B.C.

The first cities were very small affairs centered around temples. The highpriest of the temple was also the chief of the city. Very soon some temples became more prominent than others and the highpriests of these temples became the first among city chiefs, or in other words, kings. Being extremely limited in territorial area, these embryonic states were little more than city states. Among the earliest of such states were those of the Indus Valley, Sumer and Egypt.

The *Indus Civilization* is the last of the great civilizations to be discovered. Though a late-comer to history books, the Indus civilization is the oldest of the first great civilizations known. Recent researches at Mehrgarh and other sites in the Indus Valley indicate that the Indus Civilization had its beginnings between 7000 and 6000 B.C. Carbon-14 analysis has shown that the later structures at Mehrgarh belong to the 6th millennium B.C. Earlier structures must therefore belong to a period prior to 6000 B.C.

It is not known who the builders of the Indus civilization were. In all probability, they were a Mediterranean race, allied to the Dravidians of India. Nor do we know very much of this civilization as the Indus seals still remain undeciphered. But the artifacts that have been unearthed indicate a level of civilization no whit behind the fabled civilizations of Sumeria and Egypt.

Sumeria was in the lower valley of the Euphrates and Tigris, in the southern half of Mesopotamia. We do not know who the Sumerians were. They were a broadheaded race, thickset and short in stature with fleshy faces and big noses prolonging the line of the forehead without any intervening depression. Their eyes were widely set apart and slanting. They have been compared by some to the Turanians of today and by others to the Dravidians of India.

Sumeria had a hectic history. The original Sumerians were overwhelmed by a number of foreign conquerors, through successive centuries - the Akkadians, Babylonians, Assyrians, Chaldeans etc. But all through these conquests and turmoil, the old Sumerian civilization remained intact, being supplemented and reinforced by the conquering races.

The racial origin of the *Egyptians* is also a matter of dispute. Some regard them as a conquering Asian race acquainted with metallurgy and armed with superior weapons, who easily triumphed over the tribes inhabiting the Nile Valley in neolithic times. The history of Egypt, unlike that of Sumeria, was more or less smooth. Except for the invasion of the Asian tribe Hyksos in 1790 B.C. and their occupation of Egypt till 1573 B.C., Egypt was ruled by a succession of indigenous dynasties, under whom the old Egyptian civilization grew to its full dimensions.

On the whole, the Indus, Sumerian and Egyptian civilizations remain the supreme human achievements of the 4th millennium B.C. Around 2000 B.C. the Phoenicians settled on the Syrian coast and laid the foundation of a maritime empire in the Mediterranean.

Hittites established a kingdom in Asia Minor which later expanded eastwards and southwards. At Mycenae (Greek mainland) and Crete and adjoining islands, other tribes about whom also we know very little, built cities that rivalled those of Sumeria and Egypt in splendour.

OUTLINE OF HISTORY

The great civilizations of Sumeria, Egypt and the Indus Valley open the long and chequered history of mankind. An outline of that history through the ages, from the early civilizations to the Second World War, is given below in chronological order.

B.C. 6000: Neolithic settlements at Mehrgarh, Baluchistan and in the *Indus Valley;* Sun-dried brick houses; Domestication of cattle, water buffalo, sheep and goats; Cultivation of wheat and barley; Copper known.

5000: Development of farming in the Indus Valley—wheat and barley, fruit trees; jujubu and date; cultivation of cotton -; pottery and beads; Neolithic settlements in *Sumeria;* domestication of animals; Beginnings of farming; Neolithic settlements in *Egypt.*

4000: Invention of potter's wheel and bow drill in *Indus Valley;* kilnfired pottery; red painted wares; beads of local stones and turquoise - copper melting. Susa founded in *Sumeria;* White painted pottery in *Egypt* and development of farming.

3500: Growth of pottery in *Indus Valley;* Several varieties of decorated wares; Sumeria develops cuneiform (wedge-shaped) writing; Sumerian temples at Erudu, Ur and Urak; Potter's wheel in use in Sumeria.

3000: Copper alloys in *Indus Valley;* bronze in use; cultivation of grape-vine; First dynasty at Ur in Sumeria; Wheeled vehicles in use; linen produced; King Menes the Fighter unites Upper and Lower Egypt; *Phoenicians* settle on the Syrian coast with centres at Tyre and Sidon; Early Minoan civilization in Crete.

2980: Memphis made the capital of Egypt; Pharoah god-king.

2870: Beginnings of Trojan culture in Asia Minor.

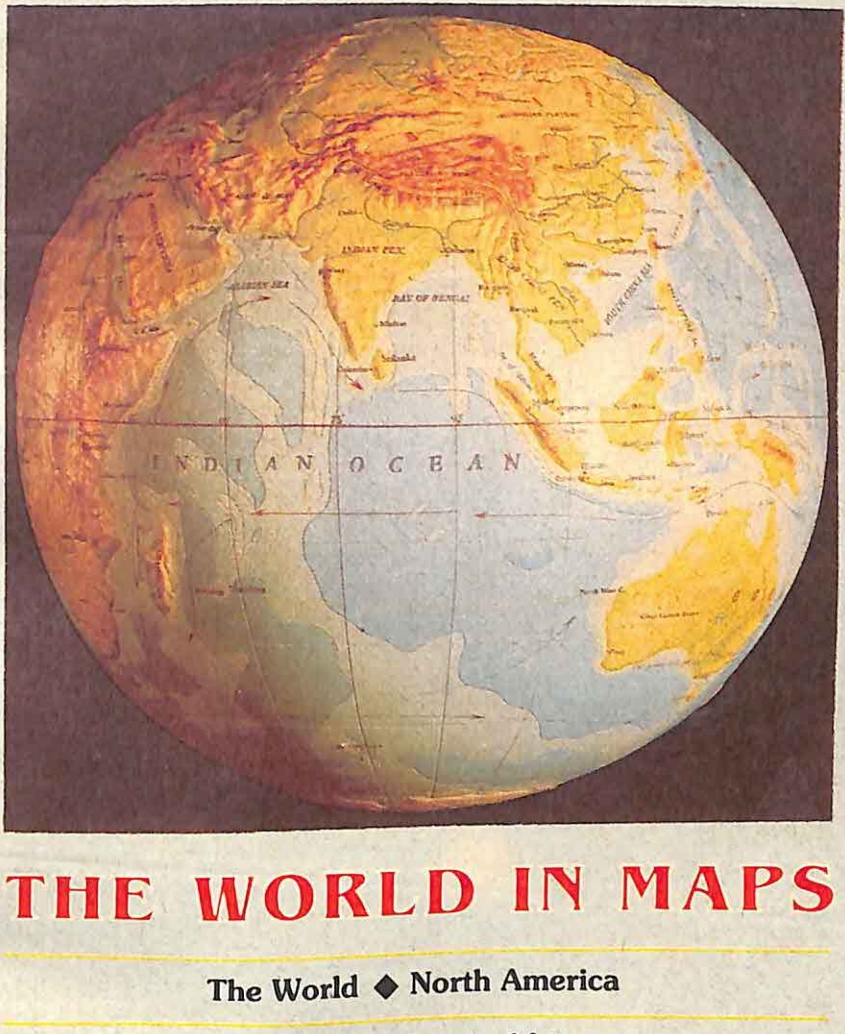
2850: Traditional beginnings of civilized life in China.

2650: The first pyramid (stepped pyramid) built in Egypt.

2500: Sixth dynasty in Egypt; Collapse of the Old Kingdom; Dominance of the Ur dynasty over all Sumeria; Sumerian numerical system based on 6 and 12; Lunar calendar; 360 degrees in a circle, 60 minutes in an hour, 60 seconds in a minute, etc.; Egypt introduces calendar of 365 days without adjustments; Egyptians discover use of papyrus; Equinoxes and solstices determined in China; Beginnings of astronomical observations in Sumeria, India, Egypt and China. Harappan civilization in Indus Valley (see Part III India).

2200: Traditional beginnings of the Hsia dynasty in China.

2100: Abraham leaves Ur in Chaldea.



THE WORLD IN MAPS

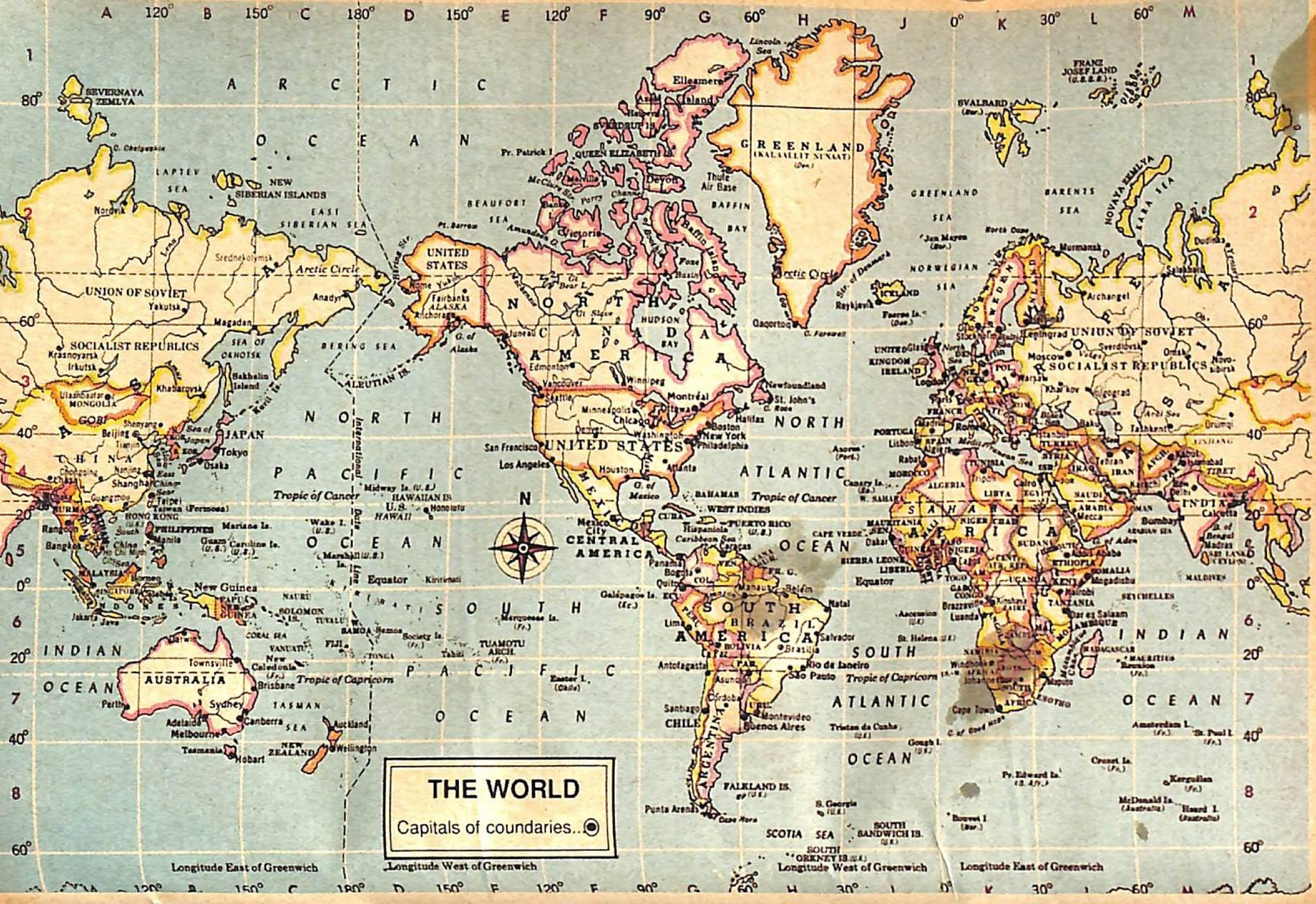
The World ◆ North America

South America ◆ Africa

Europe ◆ Asia

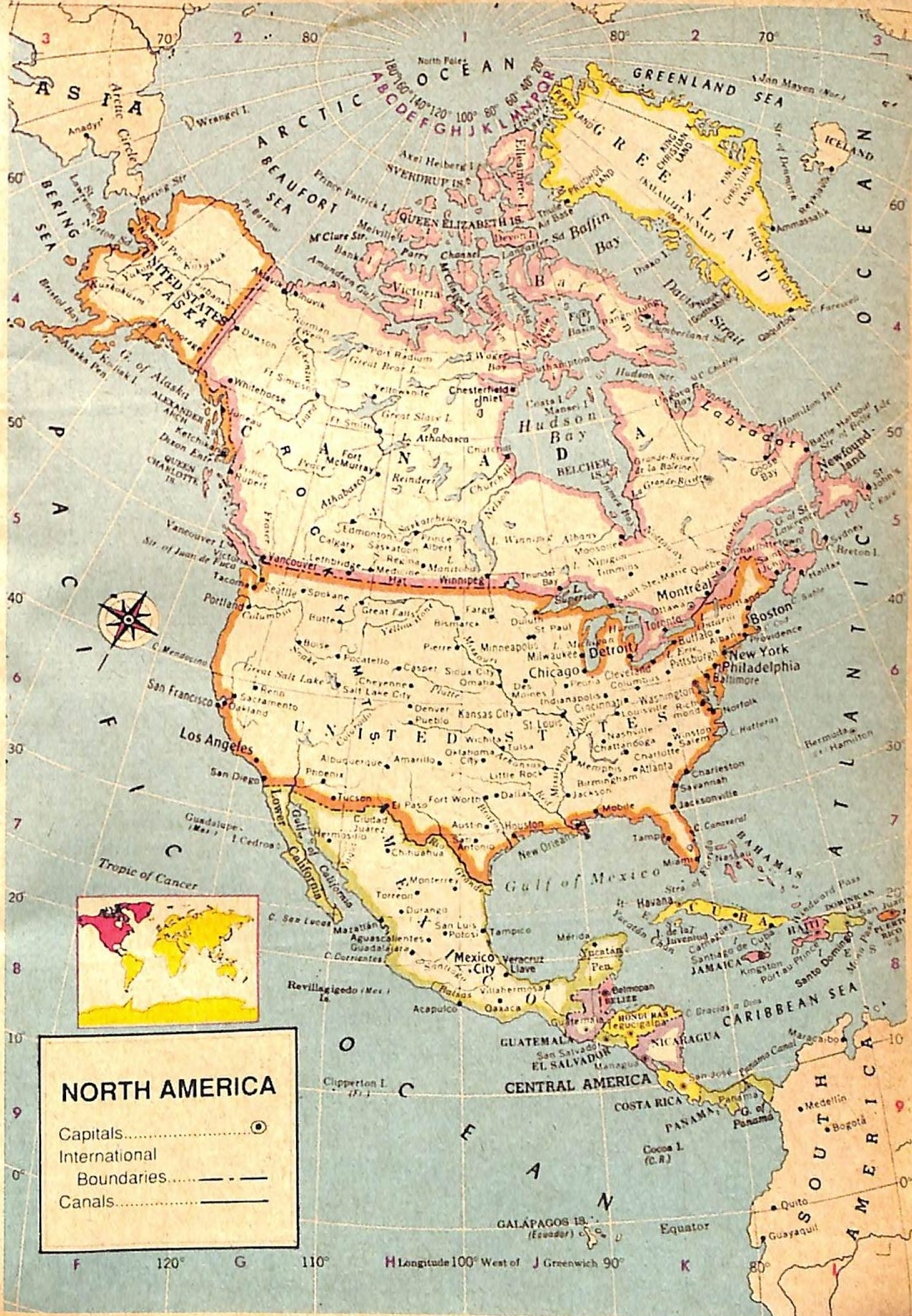
Middle East ◆ Australia

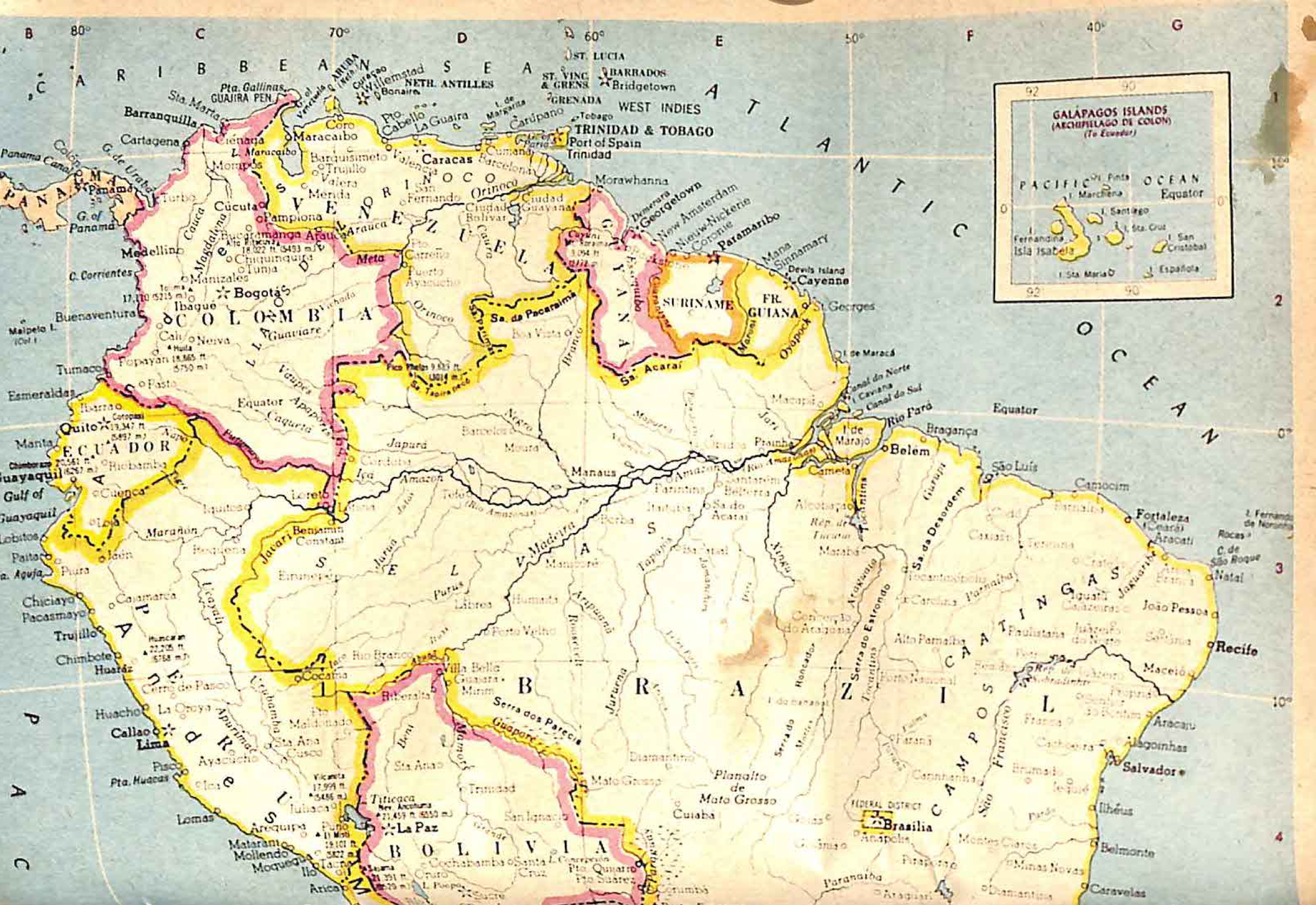
Flags of Nations



THE WORLD

Capitals of coundaries.. ●


NORTH AMERICA
Capitals
International Boundaries
Canals
ARCTIC OCEAN
North Pole
GREENLAND SEA
Jan Mayen (Nor.)
ICELAND
Reykjavík
GREENLAND
(KALAALLIT NUNAAT)
PEARY LAND
KING CHRISTIAN LAND
PRUDHOE LAND
FREDERICK VI COAST
Thule Air Base
Ammassalik
Nuuk (Godthåb)
Qaqortoq
C. Farewell
Disko I.
Davis Strait
Baffin Bay
Ellesmere I.
Axel Heiberg I.
SVERDRUP IS.
QUEEN ELIZABETH IS.
Devon I.
Lancaster Sd.
Prince Patrick I.
Melville I.
M'Clure Str.
Banks I.
Parry Channel
Victoria I.
Amundsen Gulf
Baffin I.
Foxe Basin
Pangnirtung
Cumberland Sd.
Southampton I.
Hudson Str.
Ungava Bay
Labrador
Hamilton Inlet
Goose Bay
Battle Harbour
Str. of Belle Isle
Newfoundland
St. John's
C. Race
G. of St. Lawrence
Charlottetown
Sydney
C. Breton I.
Halifax
C. Sable
Hudson Bay
Mansel I.
Coats I.
Chesterfield Inlet
Churchill
BELCHER IS.
James Bay
Grande-Rivière de la Baleine
La Grande Rivière
Moosonee
Albany
Timmins
L. Nipigon
Thunder Bay
L. Superior
Sault Ste. Marie
Québec
Montréal
Ottawa
Toronto
L. Ontario
L. Huron
L. Michigan
L. Erie
CANADA
Wager Bay
Port Radium
Great Bear L.
Yellowknife
Great Slave L.
Ft. Smith
L. Athabasca
Fort McMurray
Reindeer L.
Athabasca
Peace
Saskatchewan
Edmonton
Calgary
Saskatoon
Prince Albert
Regina
L. Manitoba
L. Winnipeg
Lethbridge
Medicine Hat
Winnipeg
Nelson
Churchill
Inuvik
Aklavik
Norman Wells
Mackenzie
Ft. Simpson
Dawson
Whitehorse
Liard
Juneau
Ketchikan
Prince Rupert
Fraser
Vancouver I.
Vancouver
Victoria
Str. of Juan de Fuca
ALEXANDER ARCH.
Dixon Entr.
QUEEN CHARLOTTE IS.
UNITED STATES
ALASKA
Pt. Barrow
Kotzebue
Seward Pen.
Norton Sd.
St. Lawrence I.
Bering Str.
BERING SEA
Yukon
Kuskokwim
Fairbanks
Anchorage
Bristol Bay
Alaska Pen.
Kodiak I.
G. of Alaska
BEAUFORT SEA
Wrangel I.
ASIA
Anadyr'
Arctic Circle
ROCKY MTS.
Seattle
Tacoma
Spokane
Portland
Columbia
Great Falls
Butte
Yellowstone
Bismarck
Fargo
Duluth
St. Paul
Minneapolis
Pierre
Boise
Snake
Pocatello
Casper
Sioux City
Omaha
Great Salt Lake
Cheyenne
Salt Lake City
Platte
Reno
Sacramento
Oakland
San Francisco
C. Mendocino
Denver
Pueblo
Colorado
Kansas City
Des Moines
St. Louis
Milwaukee
Chicago
Detroit
Peoria
Indianapolis
Cleveland
Columbus
Cincinnati
Pittsburgh
Buffalo
Albany
Portland
Boston
C. Cod
Providence
New York
Philadelphia
Baltimore
Washington
Richmond
Norfolk
C. Hatteras
Louisville
Nashville
Chattanooga
Winston Salem
Charlotte
Atlanta
Memphis
Birmingham
Jackson
Charleston
Savannah
Jacksonville
Mobile
UNITED STATES
Los Angeles
San Diego
Phoenix
Tucson
Albuquerque
Amarillo
Oklahoma City
Tulsa
Wichita
Arkansas
Little Rock
Mississippi
Missouri
Ohio
Red
Dallas
Fort Worth
Brazos
Austin
San Antonio
Houston
New Orleans
El Paso
Rio Grande
Tampa
Miami
C. Canaveral
Str. of Florida
BAHAMAS
Nassau
Bermuda
Hamilton
ATLANTIC OCEAN
PACIFIC OCEAN
Tropic of Cancer
Gulf of Mexico
MEXICO
Ciudad Juárez
Hermosillo
Chihuahua
Guadalupe (Mex.)
I. Cedros
Lower California
Gulf of California
C. San Lucas
Monterrey
Torreón
Durango
Mazatlán
San Luis Potosí
Tampico
Aguascalientes
Guadalajara
C. Corrientes
Mexico City
Veracruz Llave
Santiago
Balsas
Villahermosa
Acapulco
Oaxaca
Revillagigedo (Mex.) Is.
Clipperton I. (Fr.)
Mérida
Yucatán Pen.
Yucatán Chan.
Havana
CUBA
I. de la Juventud
Camagüey
Santiago de Cuba
JAMAICA
Kingston
Windward Pass.
HAITI
Port au Prince
DOMINICAN REP.
Santo Domingo
Mona Pass.
San Juan
PUERTO RICO (U.S.)
Belmopan
BELIZE
Guatemala
GUATEMALA
HONDURAS
Tegucigalpa
C. Gracias a Dios
NICARAGUA
CARIBBEAN SEA
San Salvador
EL SALVADOR
Managua
CENTRAL AMERICA
San José
COSTA RICA
Panama Canal
Panamá
PANAMA
G. of Panamá
Maracaibo
Medellín
Bogotá
SOUTH AMERICA
Quito
Guayaquil
Equator
Cocos I. (C.R.)
GALÁPAGOS IS. (Ecuador)
Longitude 100° West of Greenwich 90°
180° 160° 140° 120° 100° 80° 60° 40° 20°
A B C D E F G H J K L M N P Q R
1 2 3 4 5 6 7 8 9
F G H J K
120° 110° 80° 70°
60° 50° 40° 30° 20° 10° 0°


CARIBBEAN SEA
ATLANTIC OCEAN
PACIFIC
NETH. ANTILLES
ARUBA
Curaçao
Willemstad
Bonaire
ST. LUCIA
ST. VINC. & GRENS.
BARBADOS
Bridgetown
GRENADA
WEST INDIES
TRINIDAD & TOBAGO
Port of Spain
Trinidad
GALÁPAGOS ISLANDS
(ARCHIPIÉLAGO DE COLÓN)
(To Ecuador)
PACIFIC OCEAN
Equator
I. Pinta
I. Marchena
I. Santiago
I. Sta. Cruz
I. San Cristóbal
I. Fernandina
Isla Isabela
I. Sta. María
I. Española
PANAMA
Panama Canal
Colón
Panamá
G. of Panamá
G. de Urabá
Pta. Gallinas
GUAJIRA PEN.
Sta. Marta
Barranquilla
Cartagena
Ciénaga
L. Maracaibo
Maracaibo
Coro
Pto. Cabello
La Guaira
Caracas
Valencia
Barquisimeto
Trujillo
Valera
Mérida
Carúpano
Cumaná
Barcelona
I. de Margarita
Tobago
VENEZUELA
LLANOS DEL ORINOCO
San Fernando
Orinoco
Ciudad Guayana
Ciudad Bolívar
Caura
Arauca
Meta
Pto. Carreño
Puerto Ayacucho
Sa. da Pacaraima
Sa. Parima
Pico Phelps 9,833 ft. (3014 m.)
Sa. Tapirapecó
Boa Vista
Branco
Morawhanna
GUYANA
Demerara
Georgetown
New Amsterdam
Nieuw-Nickerie
Coronie
Paramaribo
SURINAME
Mana
Sinnamary
Devils Island
Cayenne
FR. GUIANA
St. Georges
Oyapock
Maroni
Courantyne
Essequibo
Sa. Acaraí
I. de Maracá
Canal do Norte
I. Caviana
Canal do Sul
Rio Pará
COLOMBIA
Turbo
Cúcuta
Pampiona
Bucaramanga
Alto Ritacuba 18,022 ft. (5493 m.)
Chiquinquirá
Tunja
Medellín
Manizales
Bogotá
Tolima 17,110 ft. (5215 m.)
Ibagué
Cauca
Magdalena
C. Corrientes
Buenaventura
Malpelo I. (Col.)
Cali
Neiva
Huila
Popayán 18,865 ft. (5750 m.)
Pasto
Tumaco
Guaviare
Vaupés
Apaporis
Caquetá
Equator
Esmeraldas
Ibarra
Quito
Cotopaxi 19,347 ft. (5897 m.)
ECUADOR
Manta
Chimborazo 20,561 ft. (6267 m.)
Riobamba
Guayaquil
Gulf of Guayaquil
Cuenca
Loja
Napo
Putumayo
Lobitos
Paita
Pta. Aguja
Piura
Jaén
Marañón
Iquitos
Loreto
Chiclayo
Pacasmayo
Cajamarca
Trujillo
Chimbote
Huaráz
Huascarán 22,205 ft. (6768 m.)
PERU
ANDES
Ucayali
Cerro de Pasco
Huacho
La Oroya
Callao
Lima
Pisco
Pta. Huacas
Ica
Ayacucho
Apurímac
Urubamba
Cusco
Sta. Ana
Pto. Maldonado
Vilcanota 17,999 ft. (5486 m.)
Juliaca
Lomas
Arequipa
Puno
Matarani
Mollendo
Moquegua
Ilo
Tacna
Arica
Titicaca
Nev. Ancohuma 21,489 ft. (6550 m.)
La Paz
BOLIVIA
Riberalta
Beni
Sta. Ana
Mamoré
Trinidad
San Ignacio
Cochabamba
Santa Cruz
Oruro
L. Poopó
Sajama 21,391 ft.
Pto. Suárez
Corumbá
BRAZIL
SELVAS
Japurá
Içá
Amazon
Tefé
Codajás
Barcelos
Negro
Manaus
Madeira
Purus
Juruá
Javari
Benjamin Constant
Eirunepé
Lábrea
Humaitá
Porto Velho
Rio Branco
Cocama
Guaporé
Villa Bella
Guajará-Mirim
Serra dos Parecis
Aripuanã
Roosevelt
Juruena
Mato Grosso
Diamantino
Planalto de Mato Grosso
Cuiabá
Tapajós
Jamanxim
Teles Pires
Xingu
Iriri
Santarém
Parintins
Óbidos
Prainha
Macapá
Jari
Maués
Sa. do Acaraí
Conceição do Araguaia
Araguaia
Serra do Roncador
Tocantins
Marabá
Alcobaça
Rep. de Tucuruí
Cametá
I. de Marajó
Belém
Bragança
Gurupi
Sa. da Desordem
São Luís
Camocim
Fortaleza
Aracati
I. Fernando de Noronha
Rocas
C. de São Roque
Natal
João Pessoa
Recife
Maceió
Aracaju
Alagoinhas
Salvador
Ilhéus
Belmonte
Caravelas
Parnaíba
Teresina
Caxias
Carolina
Tocantinópolis
CAATINGAS
Paulistana
Juàzeiro do Norte
Alto Parnaíba
Serra do Estrondo
Porto Nacional
CAMPOS
São Francisco
Barra
Paranã
Formosa
FEDERAL DISTRICT
Brasília
Anápolis
Goiás
Goiânia
Pirapora
Montes Claros
Minas Novas
Paranaíba
Araguari
Diamantina
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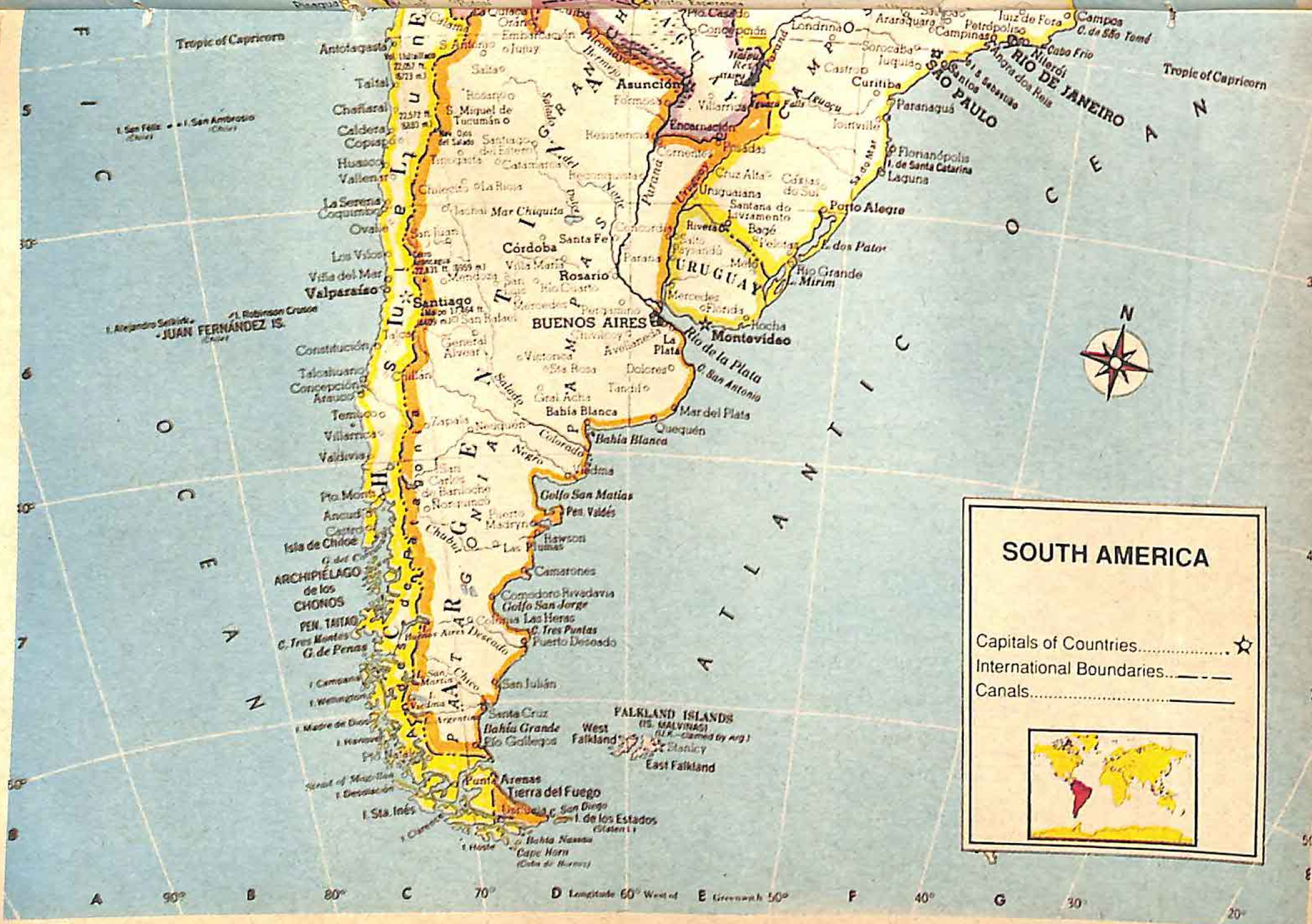
SOUTH AMERICA
Capitals of Countries ✩
International Boundaries
Canals
PACIFIC OCEAN
ATLANTIC OCEAN
Tropic of Capricorn
CHILE
ARGENTINA
PATAGONIA
URUGUAY
PARAGUAY
PAMPAS
GRAN CHACO
Andes
Asunción
Montevideo
BUENOS AIRES
Santiago
Valparaíso
Viña del Mar
Córdoba
Rosario
Santa Fe
La Plata
Río de la Plata
C. San Antonio
Mar del Plata
Bahía Blanca
Quequén
Golfo San Matías
Pen. Valdés
Rawson
Camarones
Comodoro Rivadavia
Golfo San Jorge
C. Tres Puntas
Puerto Deseado
San Julián
Santa Cruz
Bahía Grande
Río Gallegos
FALKLAND ISLANDS (IS. MALVINAS) (U.K.—claimed by Arg.)
West Falkland
East Falkland
Stanley
Punta Arenas
Tierra del Fuego
C. San Diego
I. de los Estados (Staten I.)
Bahía Nassau
Cape Horn (Cabo de Hornos)
I. Hoste
I. Sta. Inés
I. Desolación
Strait of Magellan
I. Hanover
I. Madre de Dios
I. Wellington
I. Campana
G. de Penas
C. Tres Montes
PEN. TAITAO
ARCHIPIÉLAGO de los CHONOS
Isla de Chiloé
Castro
Ancud
Pto. Montt
Valdivia
Villarrica
Temuco
Arauco
Concepción
Talcahuano
Chillán
Constitución
Talca
JUAN FERNÁNDEZ IS.
I. Alejandro Selkirk
I. Robinson Crusoe
I. San Félix
I. San Ambrosio
Los Vilos
Ovalle
Coquimbo
La Serena
Vallenar
Huasco
Copiapó
Caldera
Chañaral
Taltal
Antofagasta
Aconcagua
Mendoza
San Juan
San Luis
San Rafael
General Alvear
Zapala
Neuquén
San Carlos de Bariloche
Puerto Madryn
Chubut
Colorado
Negro
Salado
Dulce
Paraná
Uruguay
Iguaçu Falls
Encarnación
Posadas
Corrientes
Resistencia
Formosa
Villarrica
Concepción
Pto. Casado
Salta
Jujuy
S. Miguel de Tucumán
Santiago del Estero
Catamarca
La Rioja
Mar Chiquita
Villa María
Río Cuarto
Mercedes
Pergamino
Chivilcoy
Avellaneda
Dolores
Tandil
Sta. Rosa
Victorica
Gral. Acha
Viedma
Las Heras
Colonia
Salto
Paysandú
Rivera
Florida
Rocha
Melo
Pelotas
Bagé
Santana do Livramento
Uruguaiana
Cruz Alta
Caxias do Sul
Porto Alegre
L. dos Patos
Rio Grande
L. Mirim
Laguna
Florianópolis
I. de Santa Catarina
Joinville
Paranaguá
Curitiba
Castro
Londrina
Sorocaba
Jundiaí
Campinas
Araraquara
Petrópolis
Juiz de Fora
Campos
C. de São Tomé
Cabo Frio
Niterói
RIO DE JANEIRO
Angra dos Reis
I. S. Sebastião
Santos
SÃO PAULO
Serra do Mar
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90°
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Longitude 60° West of Greenwich 50°
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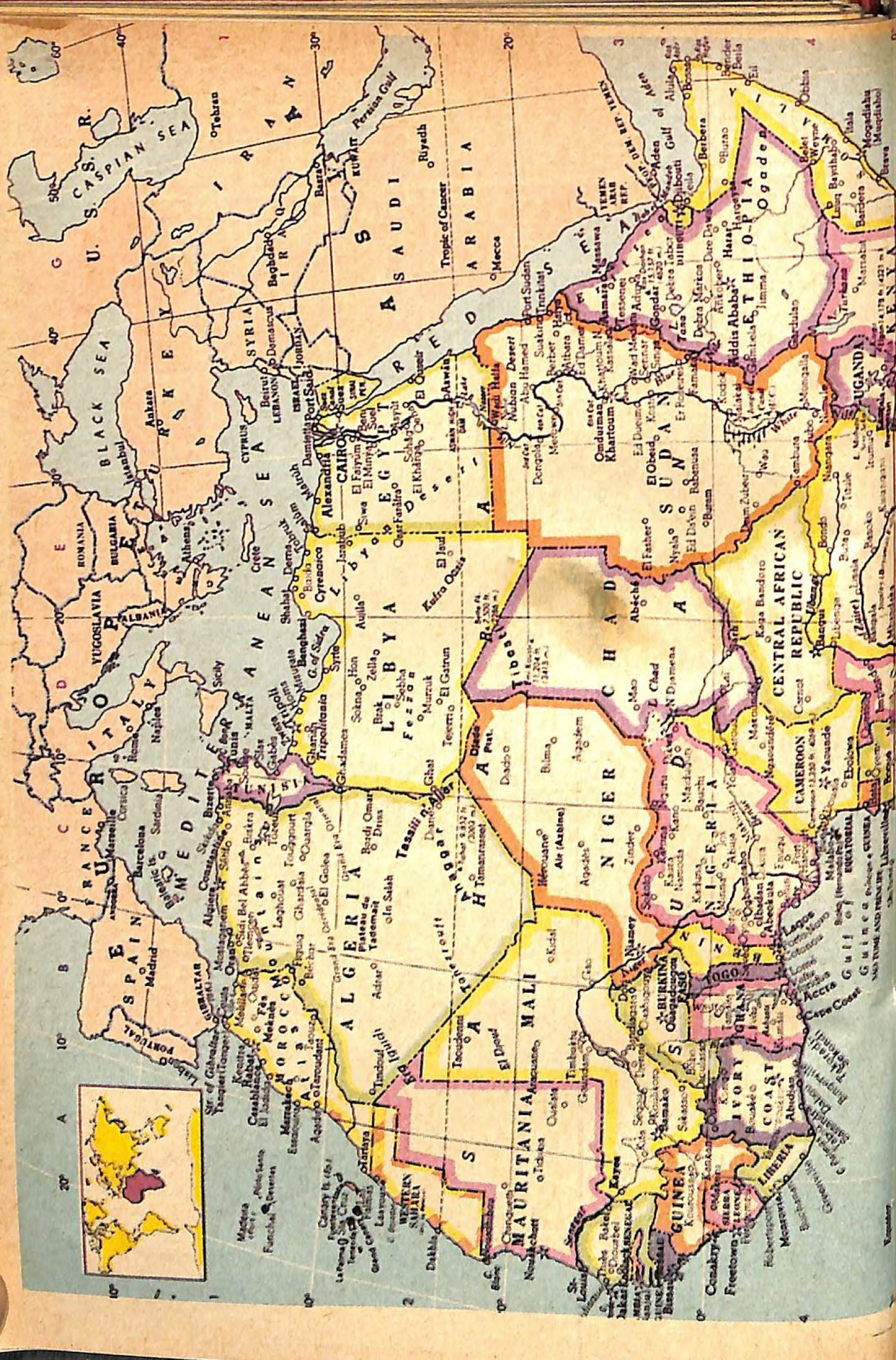
EUROPE
FRANCE
SPAIN
PORTUGAL
ITALY
YUGOSLAVIA
ALBANIA
ROMANIA
BULGARIA
TURKEY
U.S.S.R.
CASPIAN SEA
BLACK SEA
MEDITERRANEAN SEA
CYPRUS
SYRIA
LEBANON
ISRAEL
JORDAN
IRAQ
IRAN
KUWAIT
Persian Gulf
SAUDI ARABIA
Tropic of Cancer
RED SEA
YEMEN ARAB REP.
DEM. REP. YEMEN
Gulf of Aden
DJIBOUTI
MOROCCO
Atlas Mountains
ALGERIA
TUNISIA
LIBYA
EGYPT
SUDAN
ETHIOPIA
Ogaden
UGANDA
KENYA
CHAD
NIGER
MALI
MAURITANIA
WESTERN SAHARA
SENEGAL
GAMBIA
GUINEA-BISSAU
GUINEA
SIERRA LEONE
LIBERIA
IVORY COAST
BURKINA FASO
GHANA
TOGO
BENIN
NIGERIA
CAMEROON
CENTRAL AFRICAN REPUBLIC
EQUATORIAL GUINEA
SAO TOME AND PRINCIPE
Gulf of Guinea
SAHARA
Libyan Desert
Nubian Desert
Tibesti
Ahaggar
Canary Is.
Madeira
Cairo
Alexandria
Khartoum
Addis Ababa
Tripoli
Tunis
Algiers
Rabat
Casablanca
Dakar
Lagos
Accra
Abidjan
N'Djamena
Niamey
Bamako
Ouagadougou
Nouakchott
Freetown
Monrovia
Conakry
Mogadishu
Baghdad
Damascus
Beirut
Riyadh
Mecca
Tehran
Ankara
Istanbul
Athens
Rome
Madrid
Lisbon
Bangui
Yaoundé
Equator
A B C D E G
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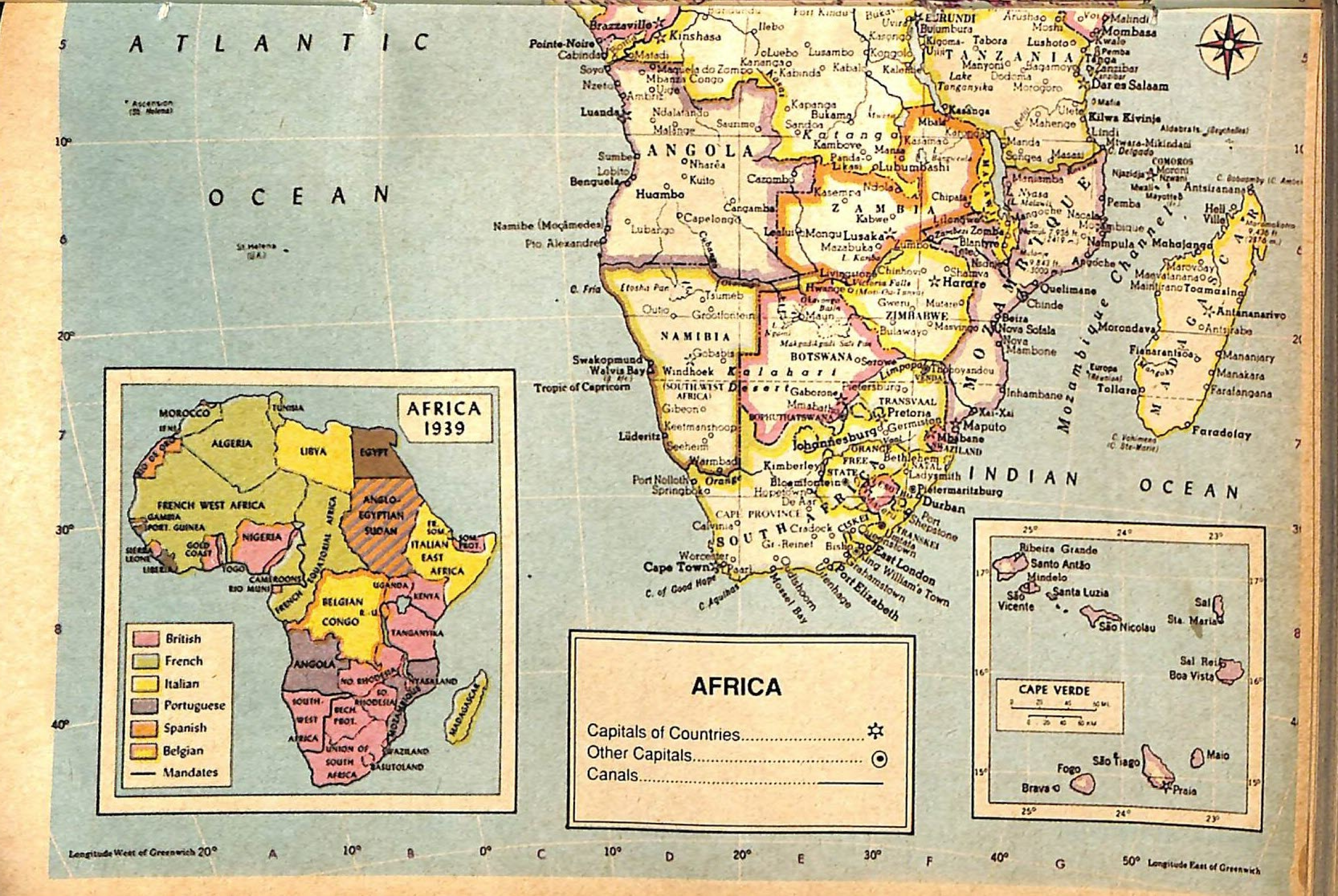
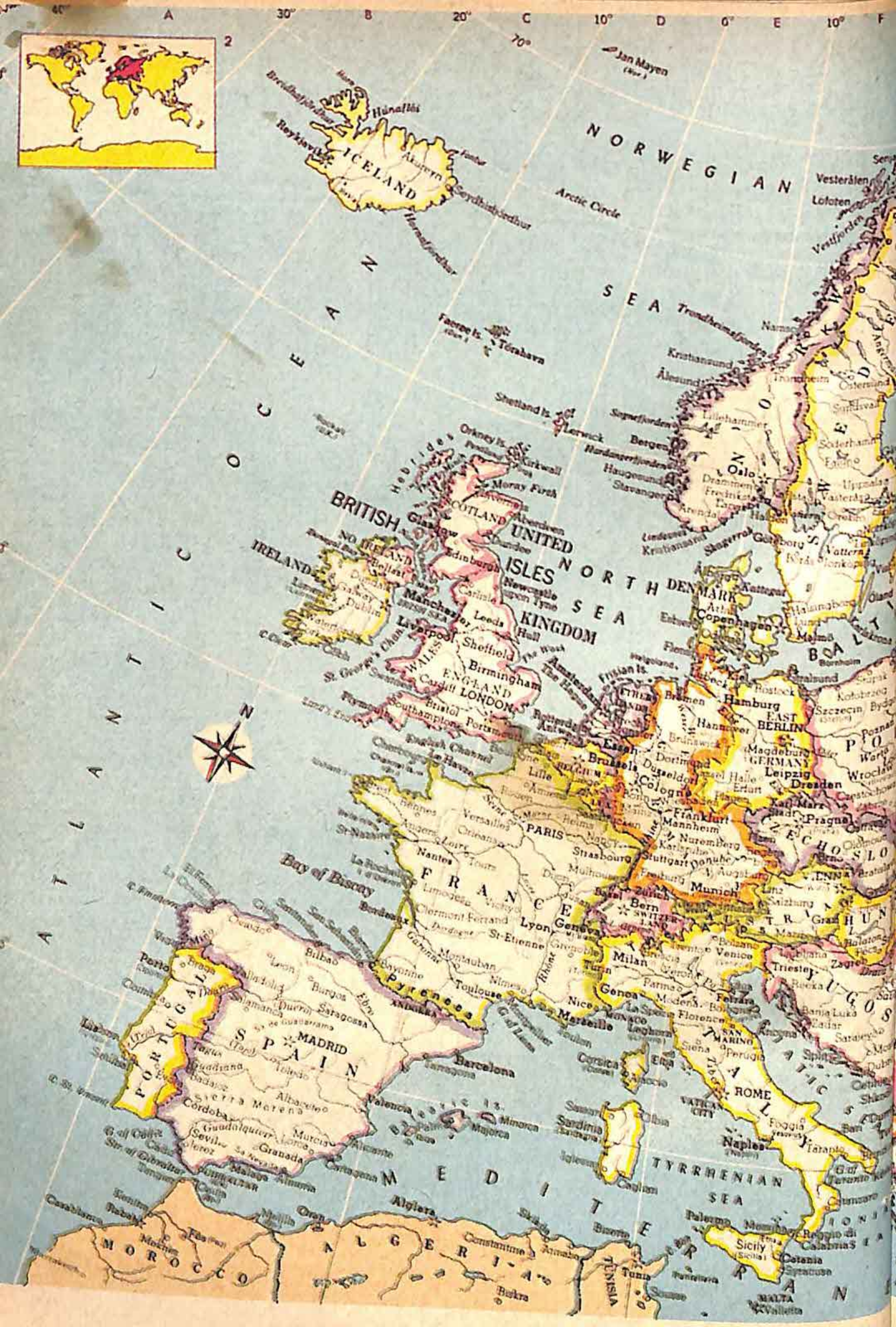
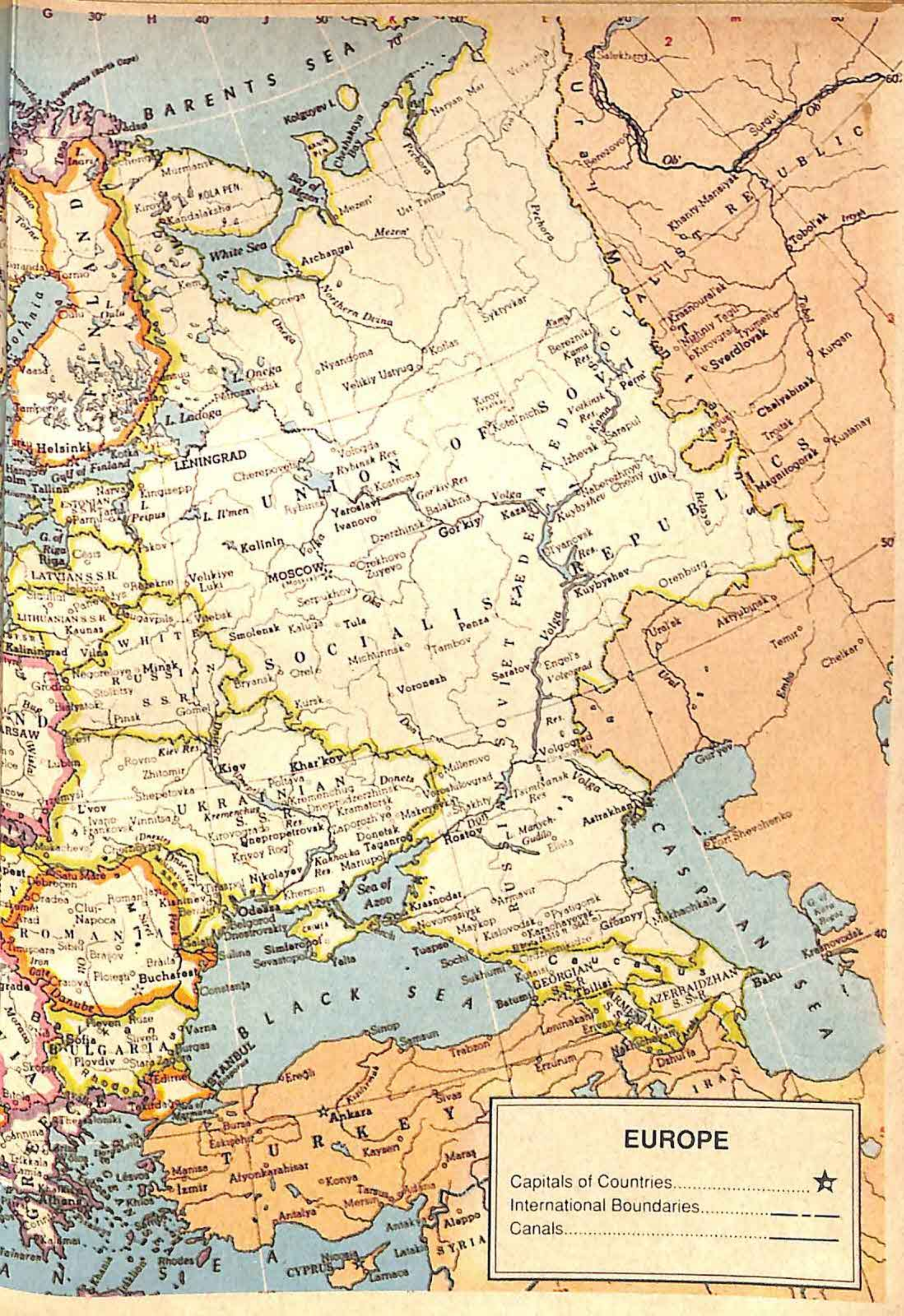
10° 20° 30° 40° 50° 60°

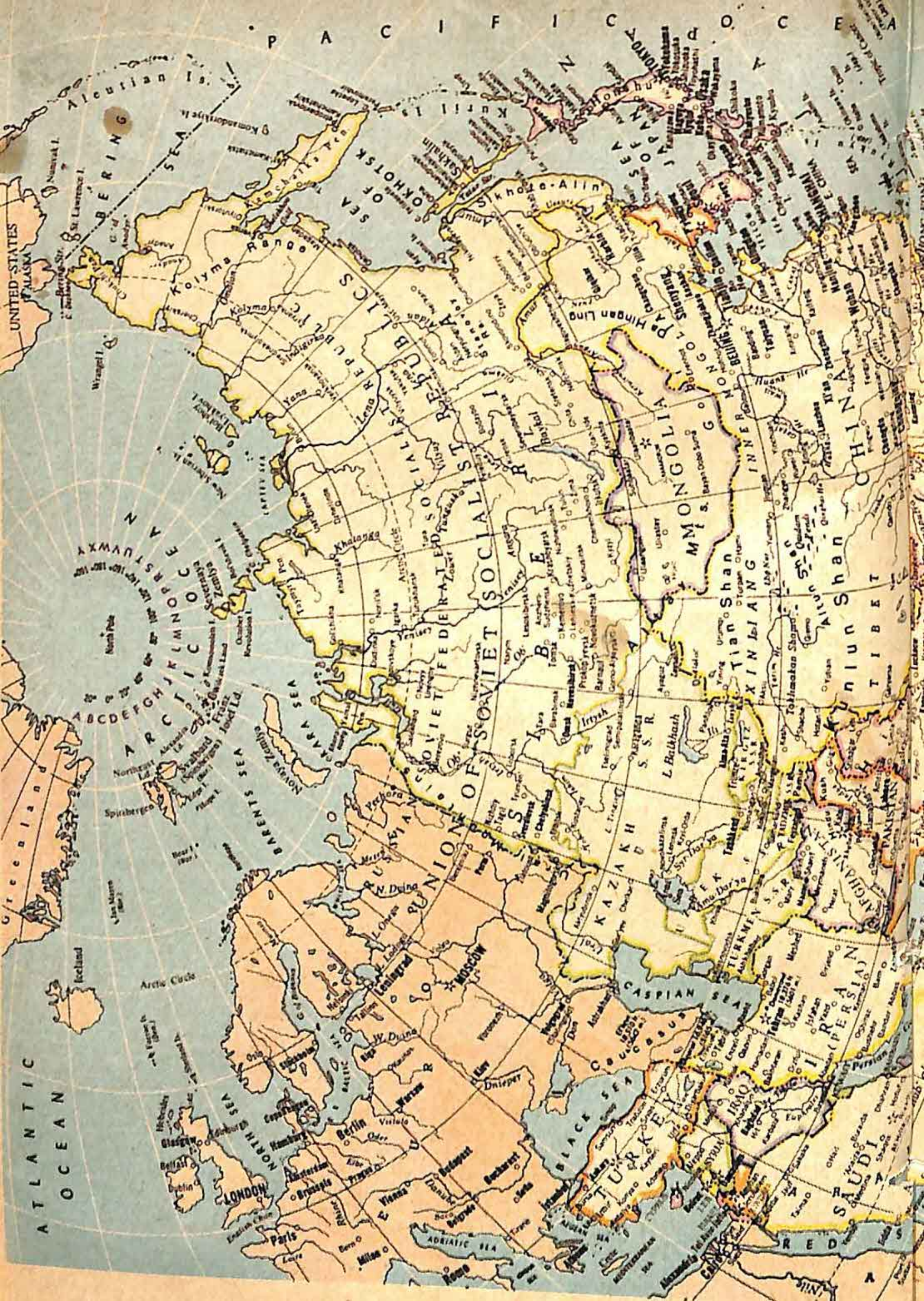

ATLANTIC
OCEAN
INDIAN
OCEAN
Mozambique Channel
Ascension (St. Helena)
St Helena (U.K.)
ANGOLA
ZAMBIA
NAMIBIA
(SOUTH WEST AFRICA)
BOTSWANA
ZIMBABWE
MOZAMBIQUE
MADAGASCAR
TANZANIA
BURUNDI
SOUTH AFRICA
CAPE PROVINCE
ORANGE FREE STATE
TRANSVAAL
NATAL
TRANSKEI
CISKEI
BOPHUTHATSWANA
VENDA
SWAZILAND
LESOTHO
COMOROS
MALAWI
Katanga
Kalahari Desert
Tropic of Capricorn
Brazzaville
Kinshasa
Pointe-Noire
Cabinda
Matadi
Soyo
Nzeto
Luanda
Sumbe
Lobito
Benguela
Namibe (Moçâmedes)
Pto. Alexandre
Huambo
Kuito
Nharêa
Malange
Ndalatando
Saurimo
Luena
Cazombo
Cangamba
Capelongo
Lubango
Mbanza Congo
Uige
Ambriz
Maquela do Zombo
Ilebo
Luebo
Kananga
Kabinda
Lusambo
Kabalo
Kongolo
Kalemie
Kapanga
Bukama
Sandoa
Kambove
Panda
Likasi
Lubumbashi
Manono
Kasama
Mbala
Kasempa
Ndola
Kabwe
Chipata
Mongu
Lusaka
Mazabuka
Lealui
Livingstone
Victoria Falls
Hwange
Chinhoyi
Harare
Gweru
Mutare
Bulawayo
Masvingo
Shamva
Etosha Pan
C. Fria
Tsumeb
Outjo
Grootfontein
Gobabis
Windhoek
Swakopmund
Walvis Bay
Gibeon
Keetmanshoop
Lüderitz
Seeheim
Warmbad
Orange
Port Nolloth
Springbok
Maun
Okavango Basin
Makgadikgadi Salt Pan
Serowe
Gaborone
Mmabatho
Limpopo
Thohoyandou
Pietersburg
Pretoria
Germiston
Johannesburg
Vaal
Bethlehem
Ladysmith
Kimberley
Bloemfontein
Hopetown
De Aar
Pietermaritzburg
Durban
Port Shepstone
Umtata
Queenstown
East London
King William's Town
Grahamstown
Port Elizabeth
Uitenhage
Oudtshoorn
Mossel Bay
C. Agulhas
C. of Good Hope
Cape Town
Paarl
Worcester
Calvinia
Cradock
Graaff-Reinet
Bisho
Mbabane
Maputo
Xai-Xai
Inhambane
Nova Mambone
Nova Sofala
Beira
Chinde
Quelimane
Angoche
Nampula
Moçambique
Nacala
Pemba
Mangoche
Lilongwe
Zomba
Blantyre
Tete
Nsanje
L. Nyasa (L. Malawi)
Lake Tanganyika
Kasanga
Bujumbura
Uvira
Kigoma
Tabora
Manyoni
Dodoma
Lushoto
Tanga
Pemba
Zanzibar
Bagamoyo
Dar es Salaam
Morogoro
Mafia
Kilwa Kivinje
Lindi
Mtwara-Mikindani
C. Delgado
Mahenge
Ulete
Manda
Songea
Masasi
Arusha
Moshi
Voi
Malindi
Mombasa
Kwale
Njazidja
Moroni
Mwali
Nzwani
Mayotte
Aldabra Is. (Seychelles)
C. Bobaomby (C. Ambre)
Antsiranana
Hell Ville
Maromokotro 9,436 ft. (2876 m.)
Mahajanga
Marovoay
Maevatanana
Maintirano
Toamasina
Antananarivo
Antsirabe
Morondava
Fianarantsoa
Mananjary
Manakara
Farafangana
Tollara
Faradofay
Europa (Réunion)
C. Vohimena (C. Ste-Marie)
Mangoky
AFRICA 1939
MOROCCO
IFNI
RIO DE ORO
TUNISIA
ALGERIA
LIBYA
EGYPT
FRENCH WEST AFRICA
GAMBIA
PORT. GUINEA
SIERRA LEONE
LIBERIA
GOLD COAST
TOGO
NIGERIA
CAMEROONS
RIO MUNI
FRENCH EQUATORIAL AFRICA
ANGLO-EGYPTIAN SUDAN
FR. SOM.
BR. SOM. PROT.
ITALIAN EAST AFRICA
UGANDA
KENYA
BELGIAN CONGO
R.-U.
TANGANYIKA
ANGOLA
NO. RHODESIA
SO. RHODESIA
NYASALAND
MOZAMBIQUE
MADAGASCAR
SOUTH-WEST AFRICA
BECH. PROT.
UNION OF SOUTH AFRICA
SWAZILAND
BASUTOLAND
British
French
Italian
Portuguese
Spanish
Belgian
Mandates
AFRICA
Capitals of Countries......... ✡
Other Capitals......... ⊙
Canals.........
CAPE VERDE
Ribeira Grande
Santo Antão
Mindelo
São Vicente
Santa Luzia
São Nicolau
Sal
Sta. Maria
Sal Rei
Boa Vista
Maio
São Tiago
Praia
Fogo
Brava
0 25 45 50 MI.
0 25 45 60 KM
25°
24°
23°
17°
16°
15°
5
10°
6
20°
7
30°
8
40°
Longitude West of Greenwich 20°
A
10°
B
0°
C
10°
D
20°
E
30°
F
40°
G
50° Longitude East of Greenwich

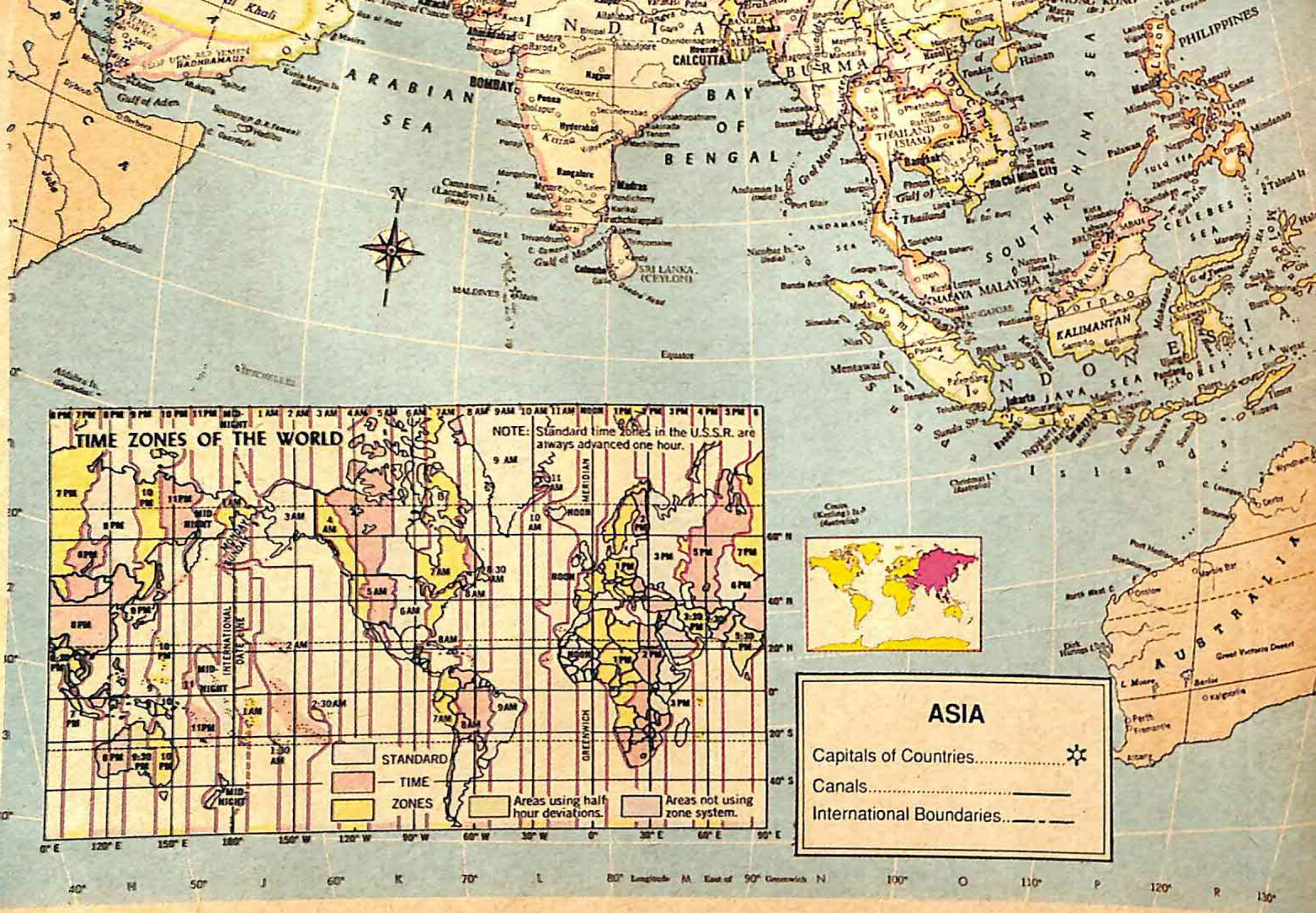

40°
A
30°
B
20°
C
10°
D
0°
E
10°
F
2
70°
Jan Mayen
Hunaflói
Reykjavik
ICELAND
Akureyri
Seydhisfjordhur
NORWEGIAN
SEA
Arctic Circle
Vesterålen
Lofoten
Vestfjorden
Trondheimsfjorden
Faeroe Is.
Tórshavn
Kristiansund
Ålesund
Trondheim
Östersund
Shetland Is.
Lerwick
Sognefjorden
Bergen
Hardangerfjorden
Haugesund
Stavanger
Lillehammer
Oslo
Drammen
Fredrikstad
Arendal
Kristiansand
Skagerrak
Göteborg
Vättern
Jönköping
Uppsala
Västerås
Söderhamn
Sundsvall
Orkney Is.
Kirkwall
Hebrides
Moray Firth
Aberdeen
Dundee
SCOTLAND
Glasgow
Edinburgh
BRITISH
ISLES
UNITED
KINGDOM
NO. IRELAND
Belfast
IRELAND
Galway
Dublin
Limerick
Cork
C. Clear
Newcastle upon Tyne
Carlisle
Manchester
Leeds
Hull
Liverpool
Sheffield
NORTH
SEA
DENMARK
Kattegat
Copenhagen
Esbjerg
Malmö
Halmstad
Öland
BALTIC
Bornholm
St. George's Chan.
WALES
Birmingham
ENGLAND
Cardiff
LONDON
Bristol
Plymouth
Southampton
Portsmouth
Land's End
The Wash
Amsterdam
The Hague
Rotterdam
Antwerp
Frisian Is.
Helgoland
Flensburg
Lübeck
Kiel
Rostock
Stralsund
Hamburg
Bremen
Hannover
Braunschweig
EAST
BERLIN
Szczecin
Kołobrzeg
Bydgoszcz
Poznań
Warta
Wrocław
Magdeburg
GERMANY
Leipzig
Dresden
Halle
Erfurt
Karl-Marx-Stadt
Praha
Essen
Dortmund
Düsseldorf
Cologne
Brussels
BELGIUM
Lille
Amiens
English Channel
Channel Is.
Le Havre
Rouen
Brest
Rennes
Versailles
PARIS
Reims
Seine
Marne
Orléans
Angers
Loire
St-Nazaire
Nantes
Tours
Nancy
Strasbourg
Frankfurt
Mannheim
Rhine
Nuremberg
Karlsruhe
Stuttgart
Danube
Augsburg
Munich
Freiburg
Mulhouse
Dijon
Basel
Zürich
Bern
SWITZERLAND
Geneva
Linz
Salzburg
VIENNA
Graz
AUSTRIA
HUNGARY
Balaton
Bay of Biscay
La Rochelle
FRANCE
Limoges
Vichy
Bordeaux
Clermont-Ferrand
Lyon
Dordogne
St-Étienne
Grenoble
Rhône
Garonne
Montauban
Bayonne
Toulouse
Nîmes
Pyrenees
ANDORRA
Marseille
Nice
MONACO
Gulf of Lion
Toulon
Turin
Milan
Verona
Venice
Trieste
Zagreb
Rijeka
Genoa
Parma
Modena
Ferrara
Bologna
La Spezia
Florence
Leghorn
SAN MARINO
Perugia
Siena
Tiber
Ljubljana
Bolzano
Trento
Brescia
Banja Luka
Zadar
Sarajevo
Split
Dubrovnik
Cetinje
Shkodër
Durrës
Bari
Foggia
Taranto
Gulf of Taranto
ROME
VATICAN CITY
Naples
Corsica
Ajaccio
Bastia
Elba
Sardinia
Sassari
Olbia
Iglesias
Cagliari
TYRRHENIAN
SEA
Palermo
Messina
Reggio di Calabria
Sicily
Catania
Syracuse
Catanzaro
Trapani
Pantelleria
MALTA
Valletta
IONIAN
SEA
ADRIATIC
ITALY
YUGOSLAVIA
CZECHOSLOVAKIA
POLAND
SWEDEN
NORWAY
C. Finisterre
La Coruña
El Ferrol
Oviedo
Gijón
Santander
San Sebastián
Bilbao
Vigo
Miño
León
Burgos
Ebro
Porto
Braga
Douro
Valladolid
Salamanca
Coimbra
Duero
Saragossa
Guadarrama
PORTUGAL
MADRID
SPAIN
Tagus
Toledo
Lisbon
Setúbal
Guadiana
Badajoz
Albacete
Sierra Morena
Córdoba
C. St. Vincent
Barcelona
Tarragona
Valencia
Balearic Is.
Majorca
Minorca
Palma
Ibiza
Alicante
Murcia
Guadalquivir
Sevilla
Granada
Sierra Nevada
Jerez
G. of Cádiz
Cádiz
Str. of Gibraltar
Gibraltar
Málaga
Almería
Cartagena
MEDITERRANEAN
Tangier
Ceuta
Melilla
Oran
Algiers
Kenitra
Rabat
Casablanca
Meknès
Fès
MOROCCO
ALGERIA
Constantine
Skikda
Annaba
Bizerte
Tunis
Sousse
TUNISIA
Biskra
ATLANTIC
OCEAN
Rockall
N

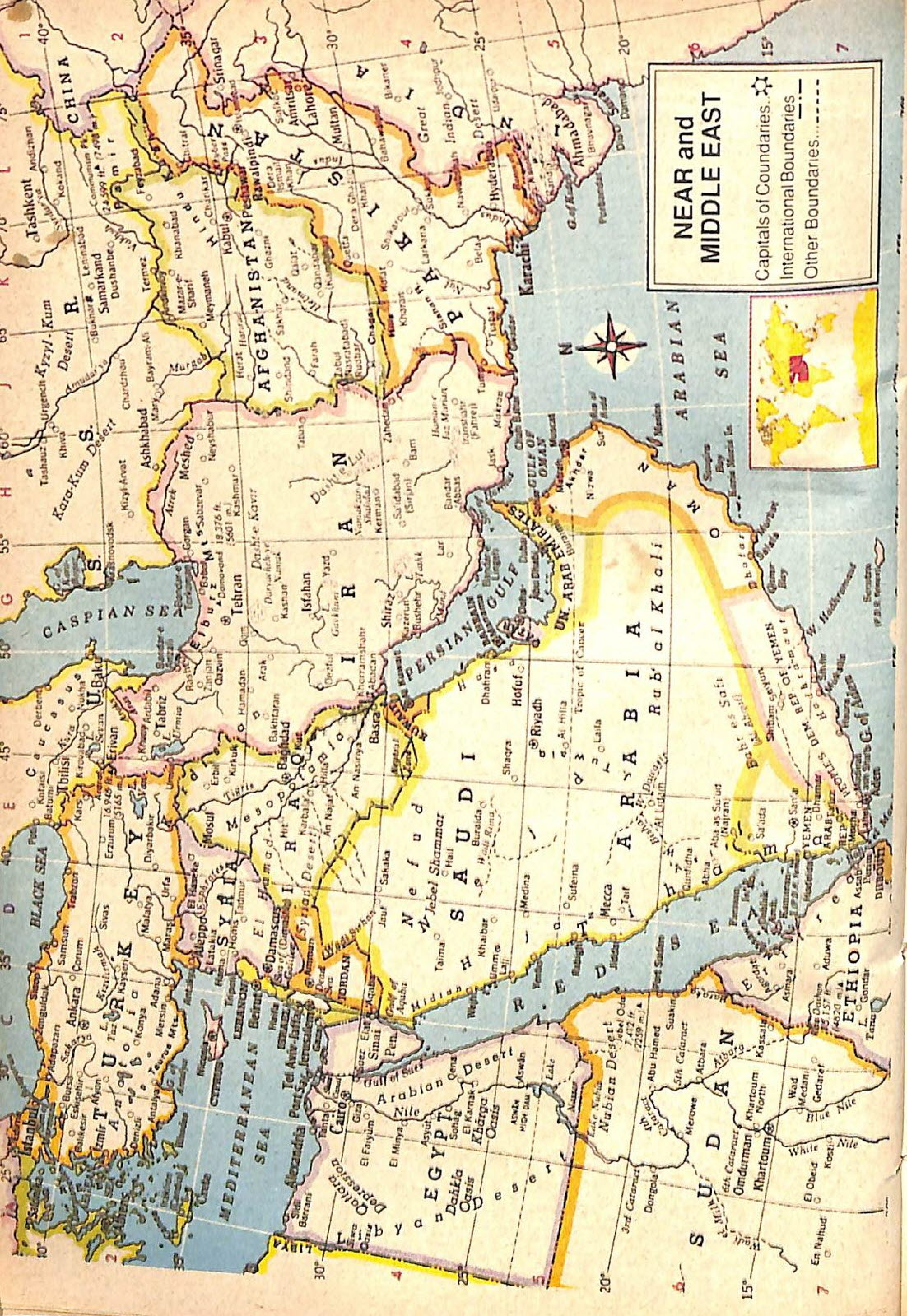


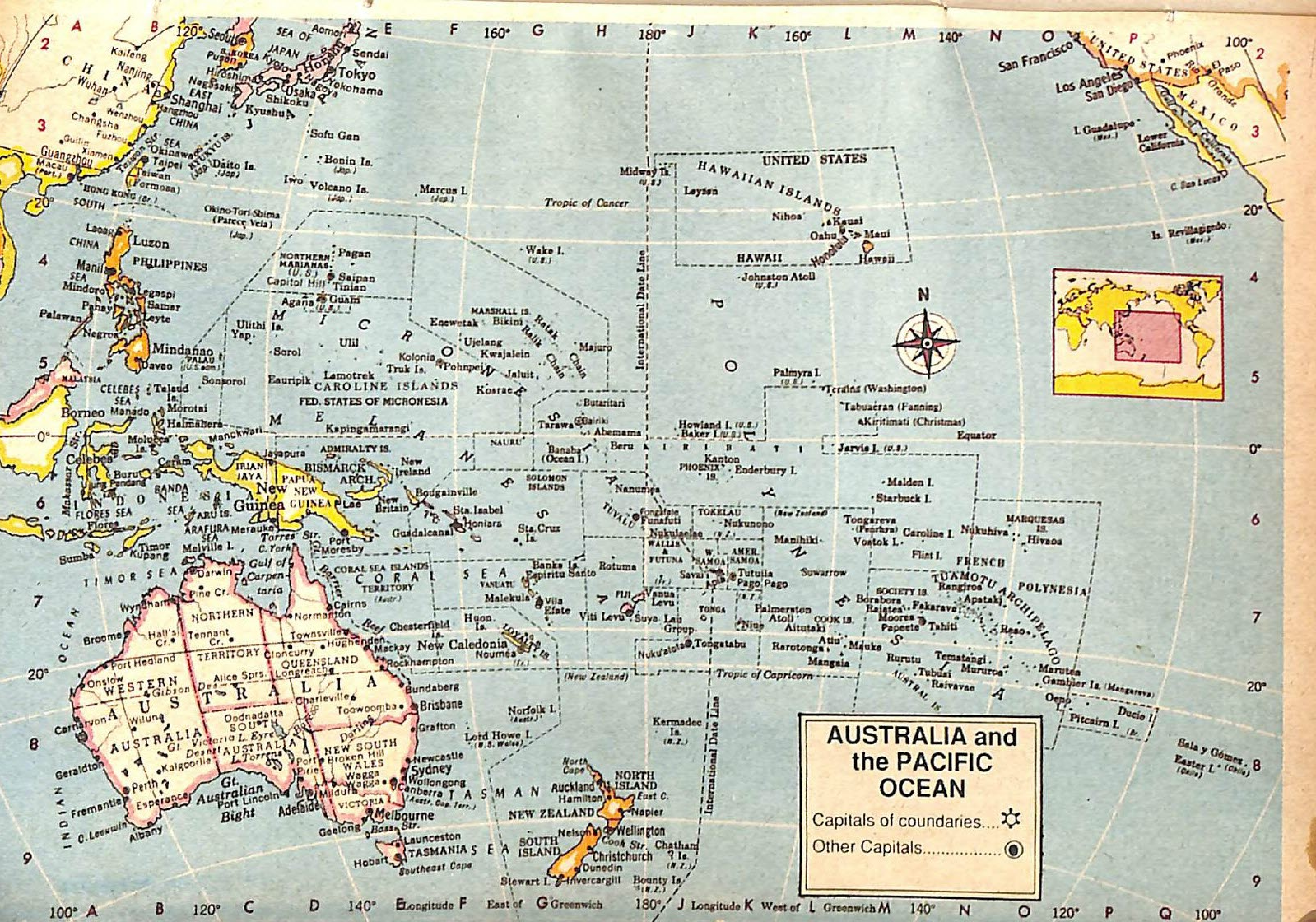
EUROPE

Capitals of Countries ☆
International Boundaries — - —
Canals ——
BARENTS SEA
Kolguyev I.
Chëshskaya Bay
Naryan Mar
Pechora
Bay of Mezen'
Mezen'
Ust' Tsil'ma
Murmansk
KOLA PEN.
Kandalaksha
White Sea
Kem'
Archangel
Onega
Northern Dvina
Syktyvkar
Kotlas
Nyandoma
Velikiy Ustyug
L. Onega
Petrozavodsk
L. Ladoga
Helsinki
Gulf of Finland
LENINGRAD
Tallinn
Narva
ESTONIAN S.S.R.
L. Peipus
L. Il'men
Cherepovets
Vologda
Rybinsk Res.
Kostroma
Yaroslavl
Ivanovo
Rybinsk
Gor'kiy Res.
Balakhna
Gor'kiy
Dzerzhinsk
Kalinin
Volga
MOSCOW
Orekhovo Zuyevo
Serpukhov
Oka
Riga
G. of Riga
LATVIAN S.S.R.
Velikiye Luki
LITHUANIAN S.S.R.
Kaunas
Vilnius
Kaliningrad
Daugavpils
Vitebsk
Smolensk
Kaluga
Tula
Penza
Minsk
WHITE RUSSIAN S.S.R.
Grodno
Bryansk
Orel
Michurinsk
Tambov
Voronezh
Kursk
Gomel'
Pinsk
Brest
Kiev Res.
Kiev
Zhitomir
Rovno
Khar'kov
Poltava
UKRAINIAN S.S.R.
Kremenchug
Dneprodzerzhinsk
Kramatorsk
Donets
L'vov
Vinnitsa
Kirovograd
Dnepropetrovsk
Zaporozh'ye
Makeyevka
Donetsk
Taganrog
Krivoy Rog
Kakhovka Res.
Mariupol'
Nikolayev
Kherson
Odessa
Kishinev
Sea of Azov
CRIMEA
Simferopol'
Sevastopol'
Yalta
Rostov
Shakhty
Voroshilovgrad
Millerovo
Krasnodar
Novorossiysk
Armavir
Maykop
Kislovodsk
Pyatigorsk
Groznyy
Tuapse
Sochi
Sukhumi
Batumi
GEORGIAN S.S.R.
Tbilisi
ARMENIAN S.S.R.
AZERBAIDZHAN S.S.R.
Baku
Caucasus
Makhachkala
Astrakhan'
Elista
L. Manych-Gudilo
Tsimlyansk Res.
Volgograd
Saratov
Engel's
Kuybyshev
Ul'yanovsk
Kazan'
Naberezhnyye Chelny
Izhevsk
Sarapul
Votkinsk Res.
Kirov
Kotel'nich
Perm'
Kama
Berezniki
Orenburg
Aktyubinsk
Ural'sk
Ural
Gur'yev
Emba
Temir
Chelkar
Fort Shevchenko
CASPIAN SEA
Kara Bogaz Gol
Krasnovodsk
Sverdlovsk
Nizhniy Tagil
Krasnoural'sk
Tyumen'
Kurgan
Chelyabinsk
Zlatoust
Troitsk
Magnitogorsk
Kustanay
Tobol'sk
Tobol
Irtysh
Khanty-Mansiysk
Ob'
Surgut
Berëzovo
Salekhard
UNION OF SOVIET SOCIALIST REPUBLICS
RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC
FINLAND
Oulu
Tornio
Vaasa
Tampere
Hanko
POLAND
WARSAW
Lublin
BULGARIA
Sofia
Varna
Burgas
Plovdiv
Stara Zagora
ROMANIA
Bucharest
Cluj-Napoca
Oradea
Braşov
Brăila
Ploieşti
Constanţa
Galaţi
Danube
GREECE
Athens
Thessaloniki
TURKEY
ISTANBUL
Ankara
Bursa
Eskişehir
Izmir
Afyonkarahisar
Konya
Kayseri
Sivas
Samsun
Sinop
Trabzon
Erzurum
Adana
Mersin
Tarsus
Antalya
Maraş
Aleppo
SYRIA
CYPRUS
Nicosia
Larnaca
Rhodes
BLACK SEA
IRAN
Erivan
Leninakan
Batumi
G

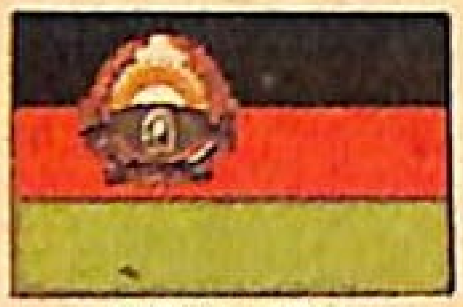

PACIFIC OCEAN
ATLANTIC OCEAN
ARCTIC OCEAN
UNION OF SOVIET SOCIALIST REPUBLICS
RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC
SIBERIA
KAZAKH S.S.R.
UZBEK S.S.R.
TURKMEN S.S.R.
KIRGIZ S.S.R.
MONGOLIA
INNER MONGOLIA
CHINA
XINJIANG
TIBET
JAPAN
KOREA
IRAN (PERSIA)
AFGHANISTAN
PAKISTAN
TURKEY
IRAQ
SYRIA
SAUDI ARABIA
UNITED STATES
ALASKA
Greenland
Iceland
Arctic Circle
North Pole
BERING SEA
SEA OF OKHOTSK
SEA OF JAPAN
BARENTS SEA
KARA SEA
NORTH SEA
BALTIC SEA
BLACK SEA
CASPIAN SEA
MEDITERRANEAN SEA
ADRIATIC SEA
RED SEA
Persian Gulf
Aleutian Is.
Kuril Is.
Sakhalin
Kamchatka Pen.
Kolyma Range
Sikhote-Alin
Da Hinggan Ling
Tian Shan
Kunlun Shan
Altun Shan
Caucasus
Novaya Zemlya
Franz Josef Ld.
Svalbard (Norway)
Spitsbergen
Severnaya Zemlya
New Siberian Is.
Wrangel I.
Lena
Yenisey
Ob
Irtysh
Amur
Kolyma
Yana
Indigirka
Khatanga
L. Baykal
L. Balkhash
Huang He
Volga
Dnieper
Danube
MOSCOW
Leningrad
LONDON
Paris
Berlin
Warsaw
Stockholm
Oslo
Copenhagen
Helsinki
Hamburg
Amsterdam
Brussels
Prague
Vienna
Budapest
Belgrade
Bucharest
Sofia
Istanbul
Ankara
Rome
Milan
Kiev
Riga
Tallinn
Dublin
Glasgow
Edinburgh
Belfast
Tehran
Baghdad
Cairo
Alexandria
Tashkent
Alma-Ata
Novosibirsk
Omsk
Sverdlovsk
Chelyabinsk
BEIJING
Shenyang
TOKYO
Osaka
Ulan Bator
Vladivostok

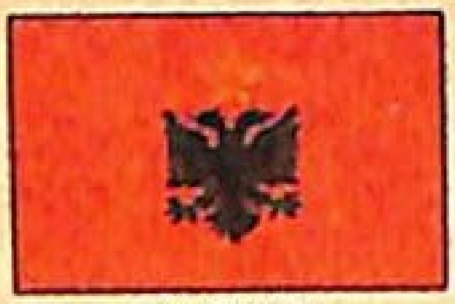

ASIA
Capitals of Countries
Canals
International Boundaries
TIME ZONES OF THE WORLD
NOTE: Standard time zones in the U.S.S.R. are always advanced one hour.
STANDARD
TIME
ZONES
Areas using half hour deviations.
Areas not using zone system.
INTERNATIONAL DATE LINE
MONDAY
SUNDAY
MERIDIAN
GREENWICH
ARABIAN SEA
BAY OF BENGAL
SOUTH CHINA SEA
INDIA
BURMA
THAILAND (SIAM)
INDONESIA
MALAYSIA
PHILIPPINES
AUSTRALIA
KALIMANTAN
BORNEO
CELEBES SEA
JAVA SEA
SRI LANKA (CEYLON)
BOMBAY
CALCUTTA
Madras
Bangalore
Hyderabad
Gulf of Aden
Gulf of Thailand
Gulf of Tonkin
Hainan
Luzon
Mindanao
Sulu Sea
Andaman Sea
Andaman Is.
Nicobar Is.
Maldives
Equator
Ho Chi Minh City
Bangkok
Jakarta
Christmas I.
Cocos (Keeling) Is.
Great Victoria Desert
Perth
80° Longitude M East of 90° Greenwich N


NEAR and MIDDLE EAST
Capitals of Coundaries
International Boundaries
Other Boundaries
TURKEY
SYRIA
LEBANON
ISRAEL
JORDAN
IRAQ
IRAN
SAUDI ARABIA
KUWAIT
BAHRAIN
QATAR
UN. ARAB EMIRATES
OMAN
YEMEN
PEOPLE'S DEM. REP. OF YEMEN
EGYPT
SUDAN
ETHIOPIA
DJIBOUTI
LIBYA
CYPRUS
AFGHANISTAN
PAKISTAN
INDIA
U. S. S. R.
CHINA
BLACK SEA
CASPIAN SEA
MEDITERRANEAN SEA
RED SEA
PERSIAN GULF
GULF OF OMAN
ARABIAN SEA
G. of Aden
Istanbul
Ankara
Damascus
Beirut
Amman
Jerusalem
Tel Aviv-Jaffa
Baghdad
Tehran
Kabul
Riyadh
Cairo
Khartoum
Karachi
Tropic of Cancer
Rub' al Khali
Arabian Desert
Nubian Desert
Libyan Desert
Syrian Desert
Nefud
Dasht-e Kavir
Dasht-e Lut
Kara-Kum Desert
Kyzyl Kum Desert
Great Indian Desert
Hindu Kush
Elburz Mts.
Caucasus
Pamir
Nile
Tigris
Euphrates
Indus
A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
10°
15°
20°
25°
30°
35°
40°
45°
50°
55°
60°
65°
70°
75°

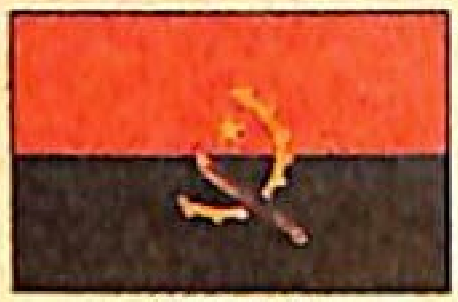


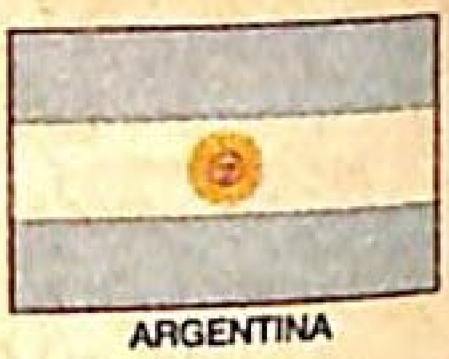
AUSTRALIA and the PACIFIC OCEAN

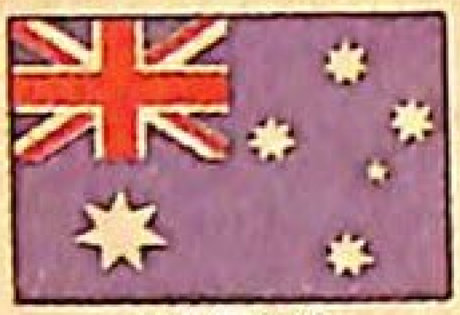

AFGHANISTAN

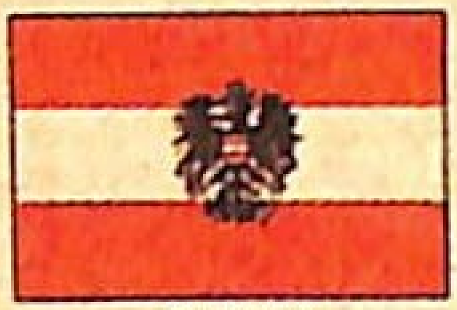

ALBANIA

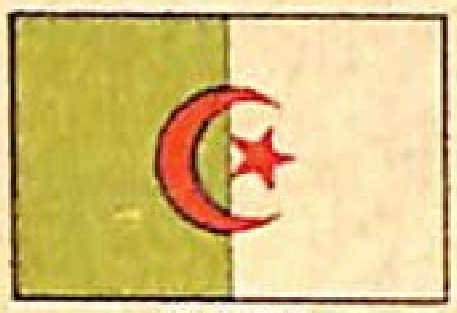
Flags of Nations

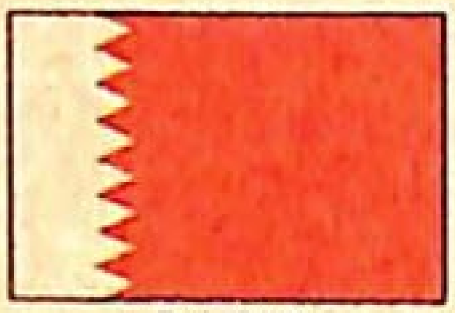

ANGOLA

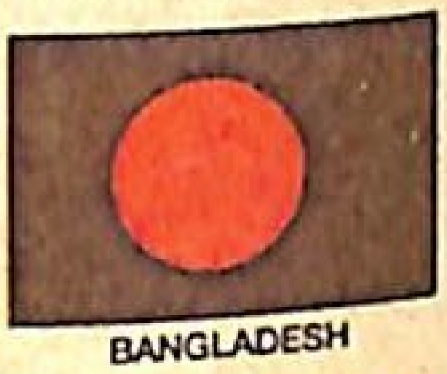

ARGENTINA

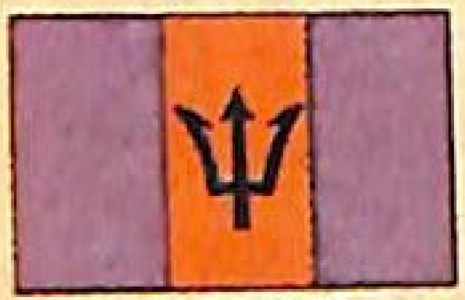

AUSTRALIA

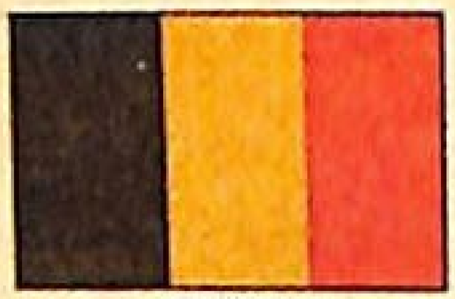

AUSTRIA

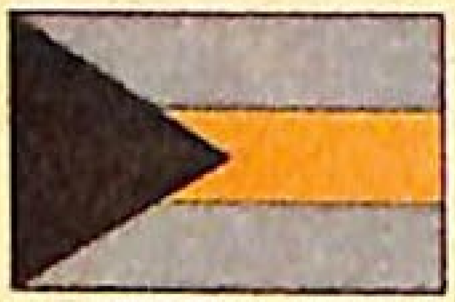

ALGERIA


BAHRAIN


BANGLADESH


BARBADOS


BELGIUM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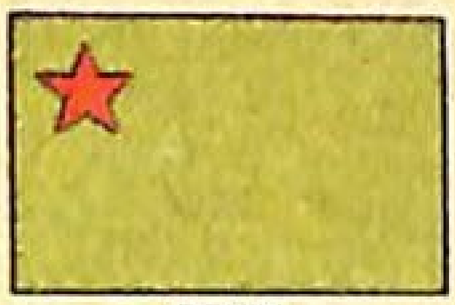
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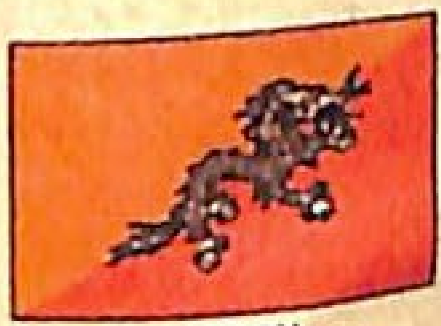
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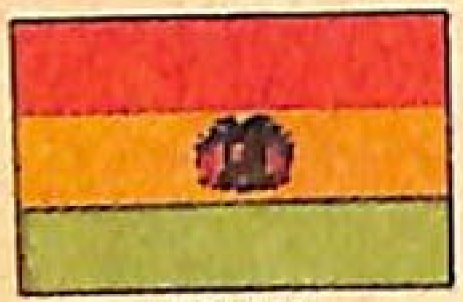
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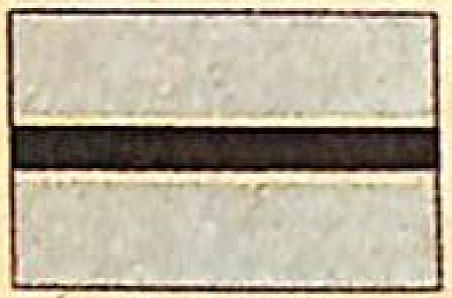
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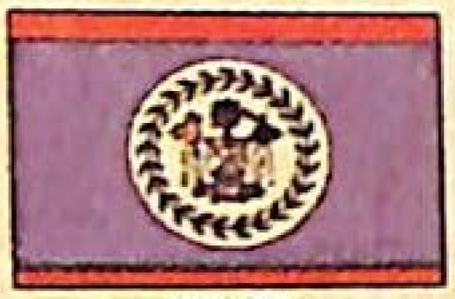
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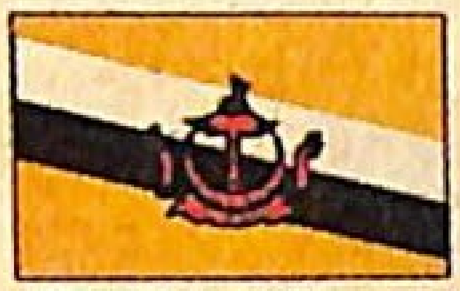
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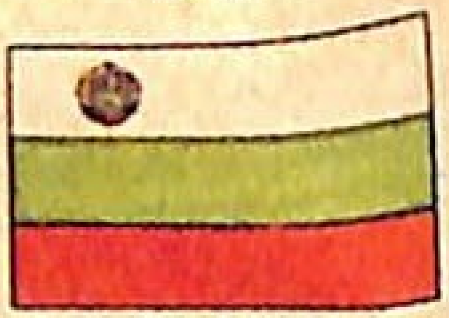
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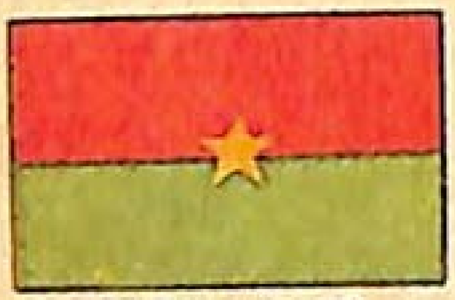
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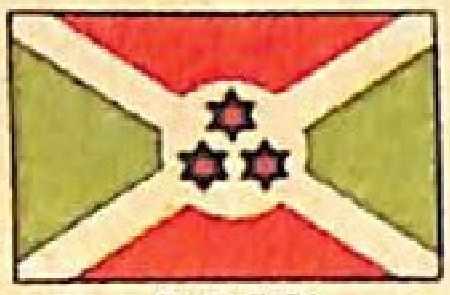
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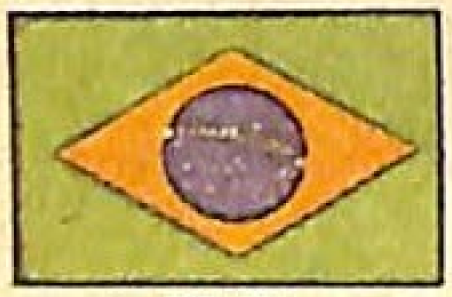
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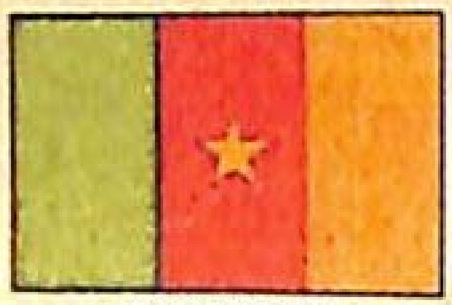
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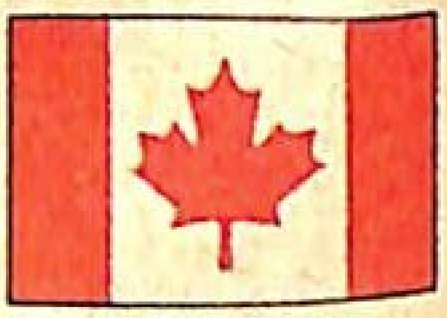
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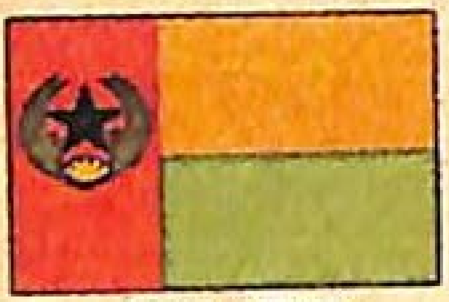
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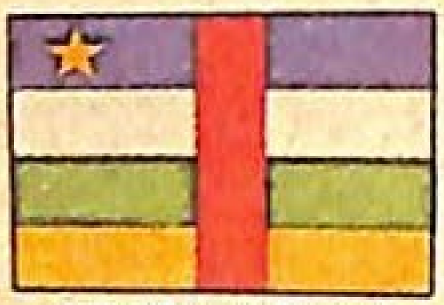
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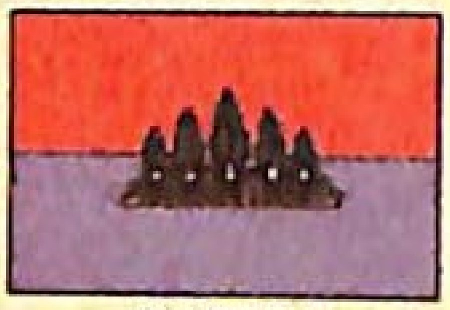
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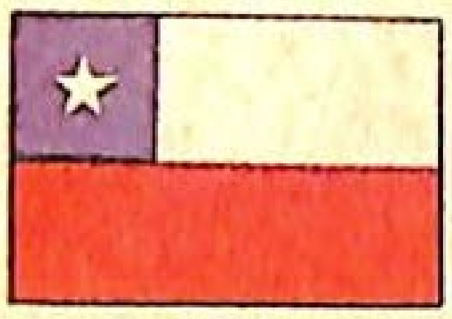
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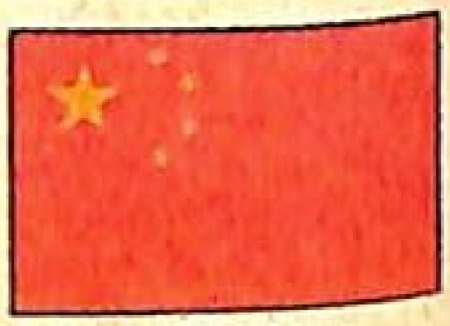
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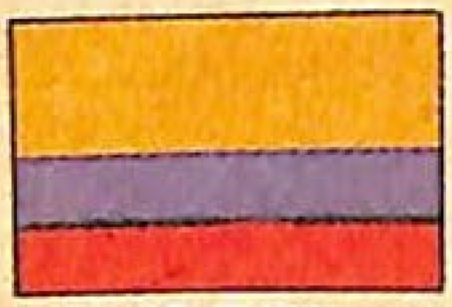
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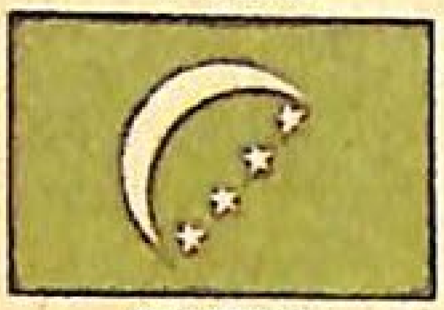
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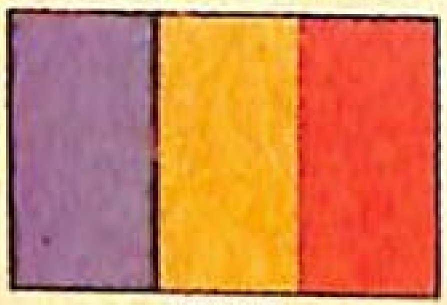
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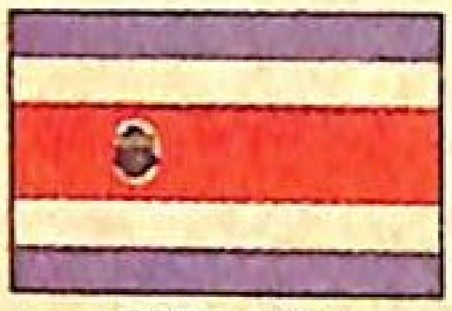
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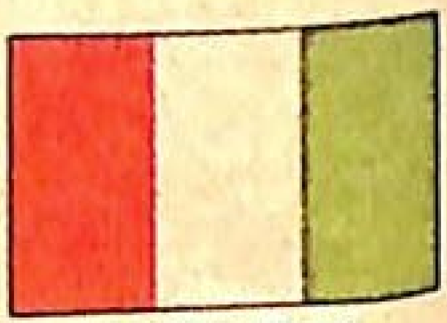
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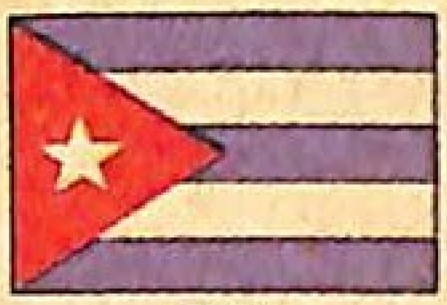
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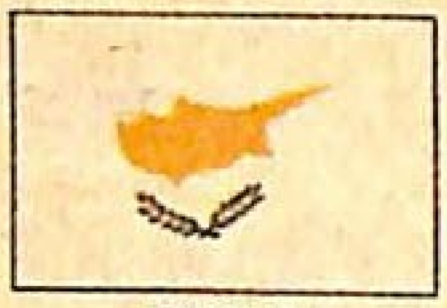
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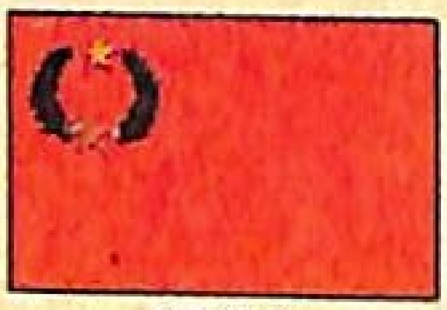
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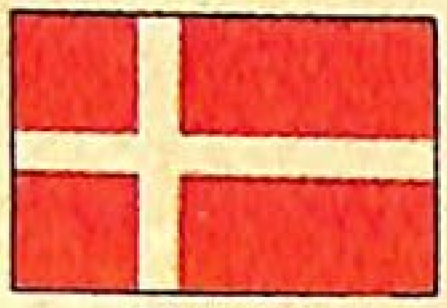
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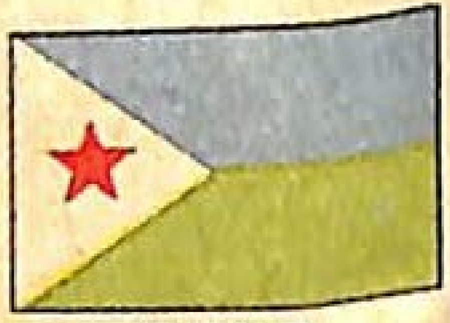
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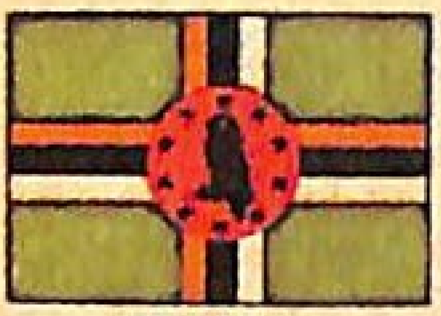
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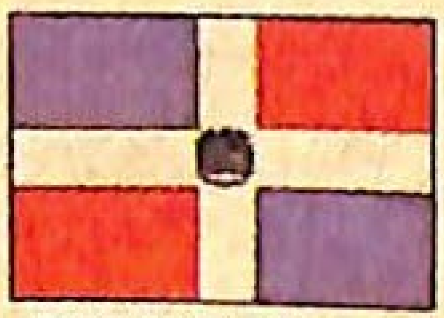
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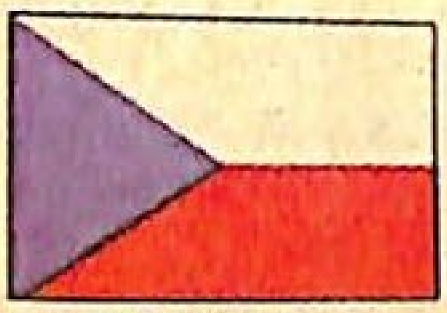
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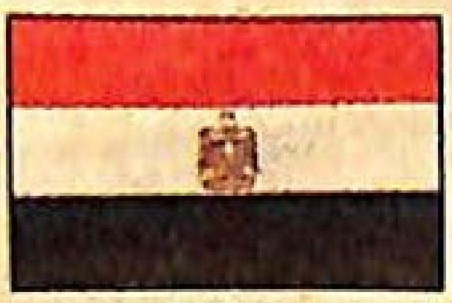
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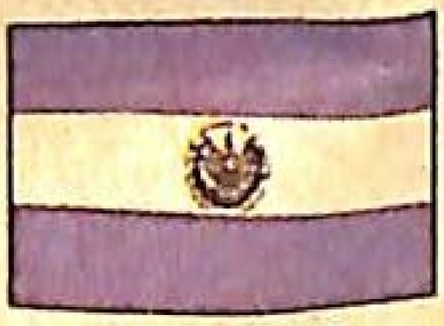
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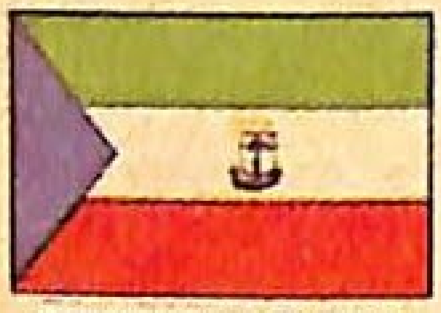
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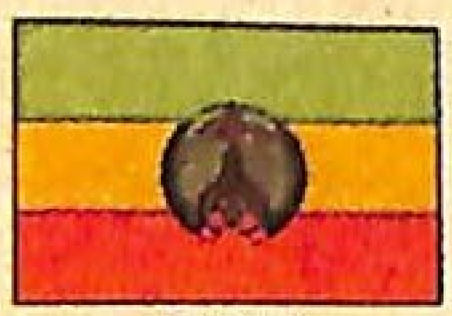
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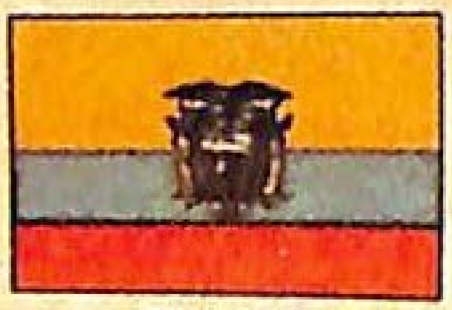
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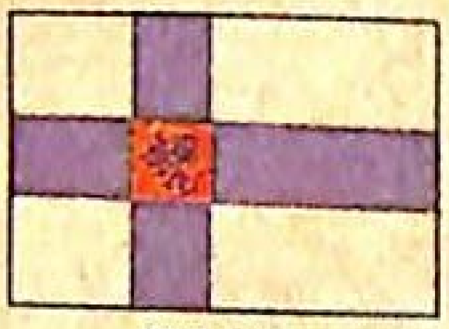
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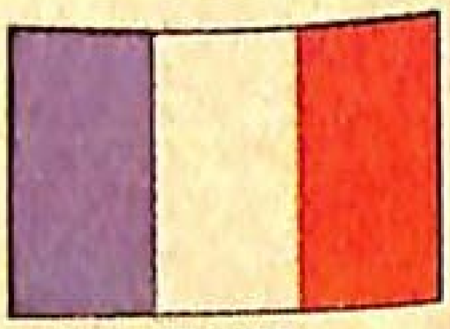
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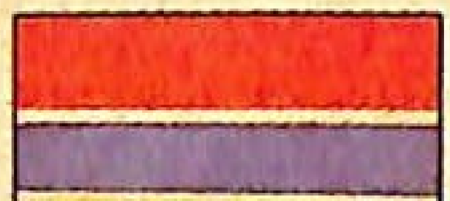

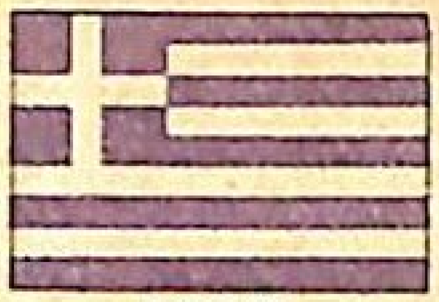
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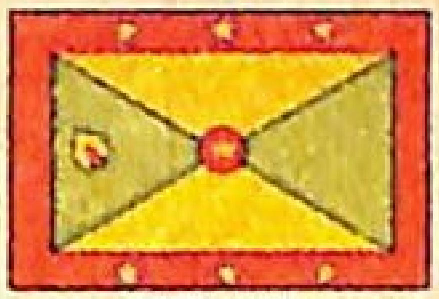
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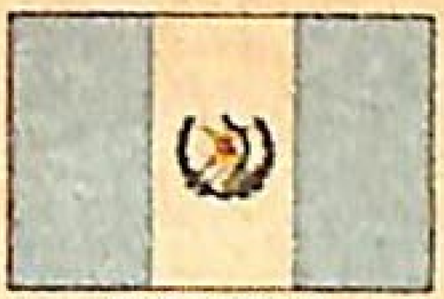
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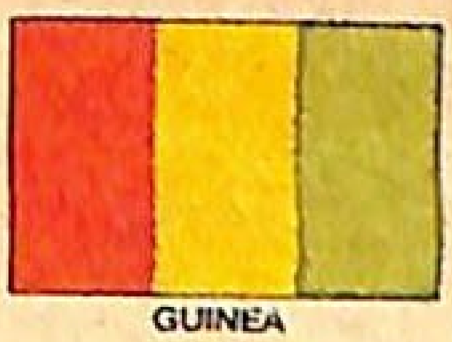
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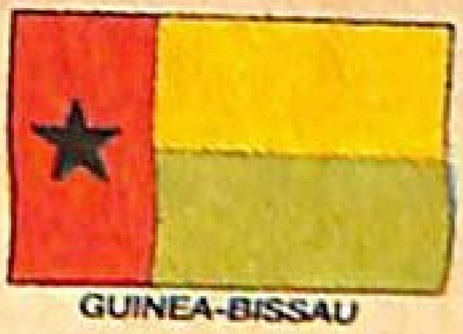
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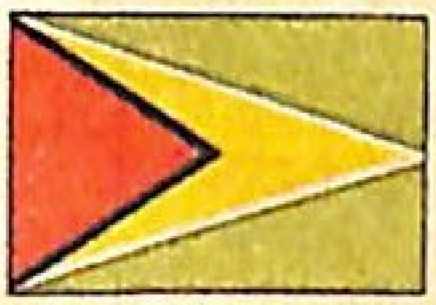
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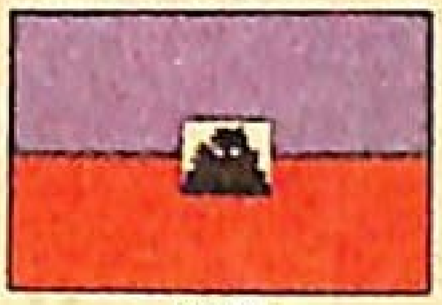
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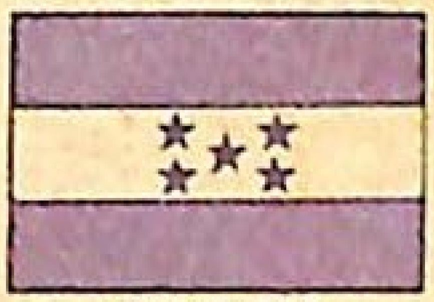
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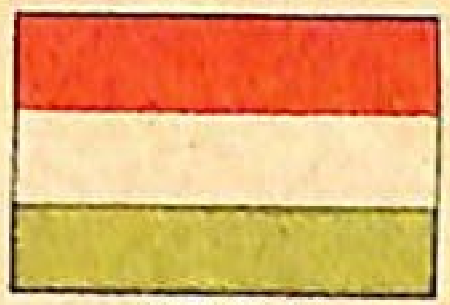
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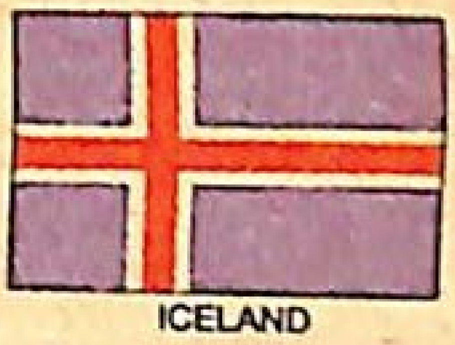
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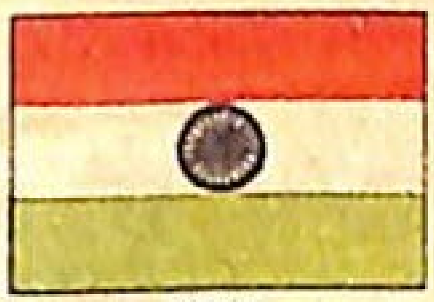
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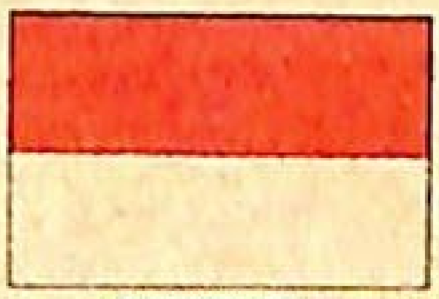
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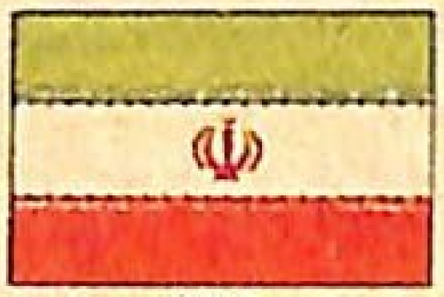
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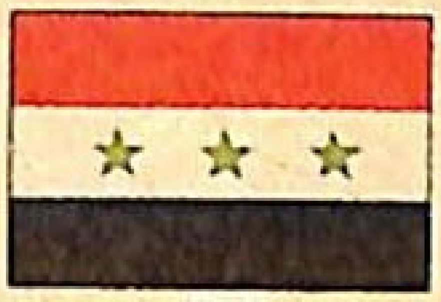
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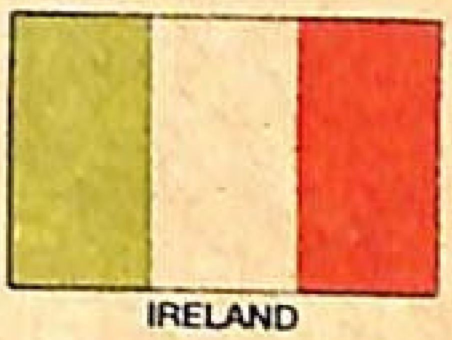
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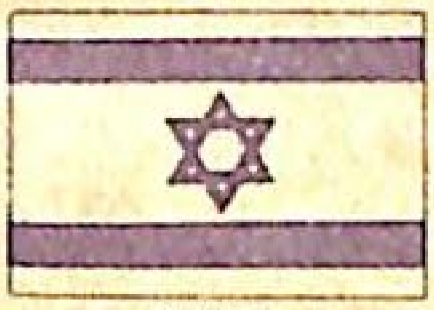
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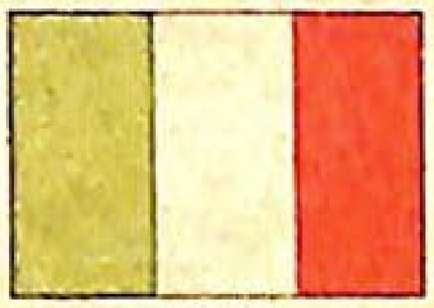
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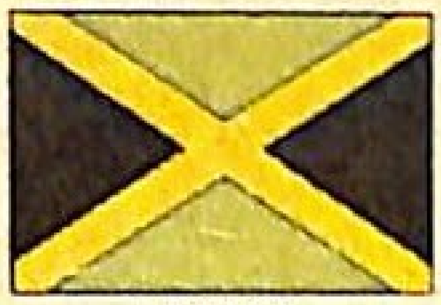
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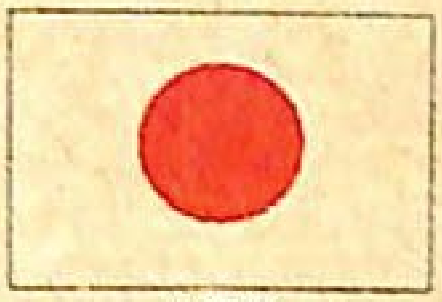
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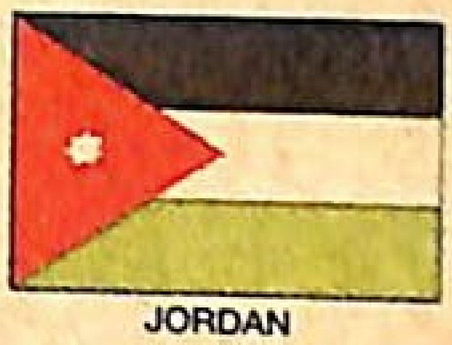
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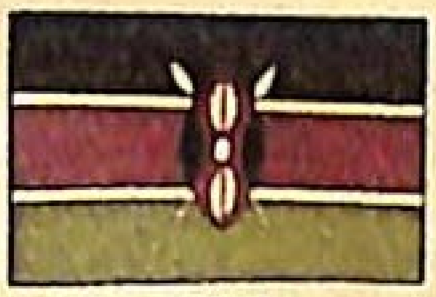
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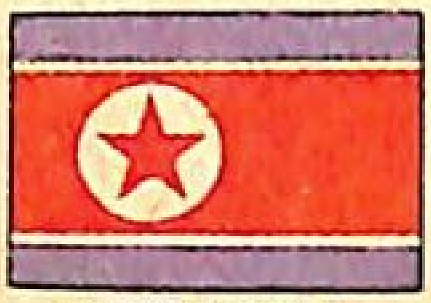
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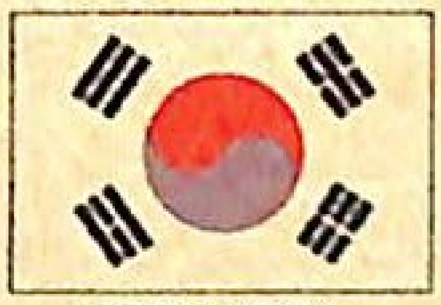
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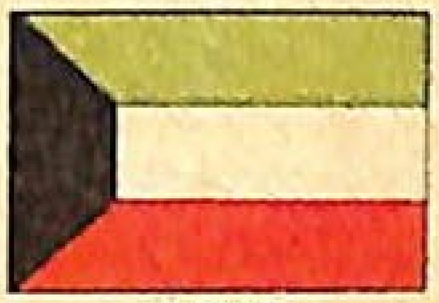
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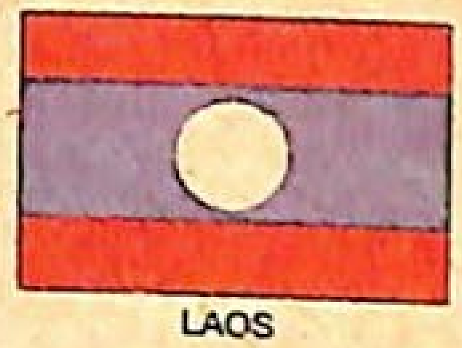
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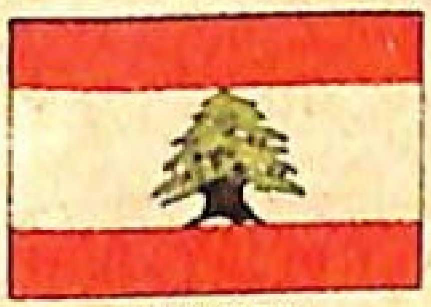
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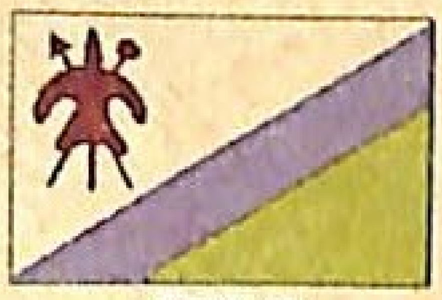
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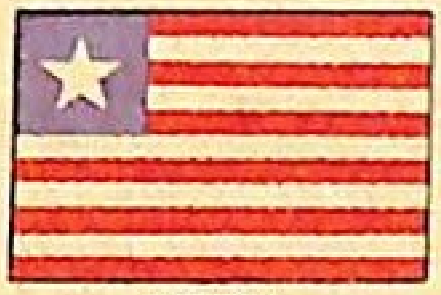
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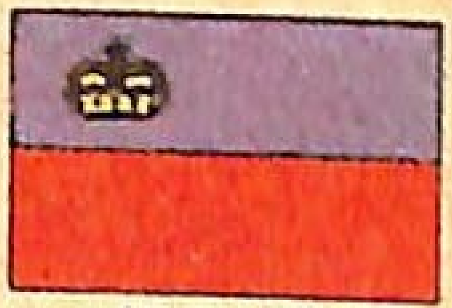
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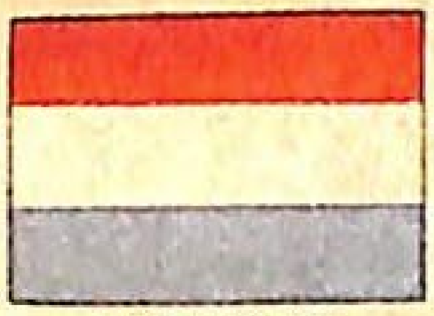
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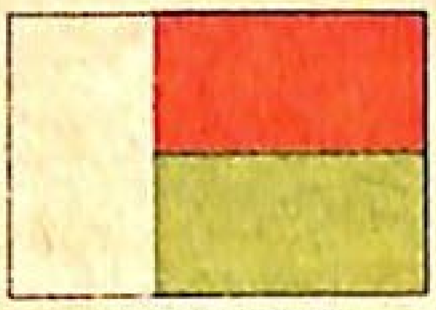
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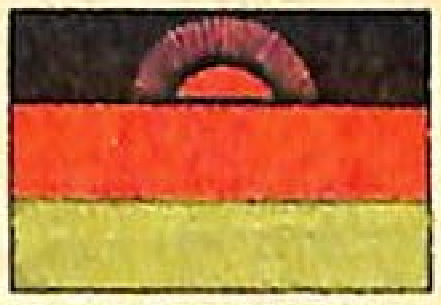
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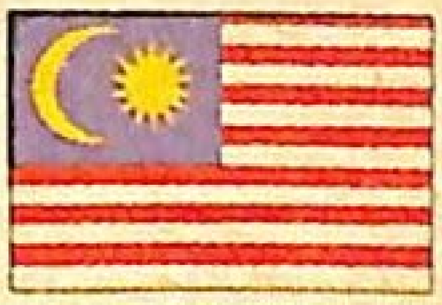
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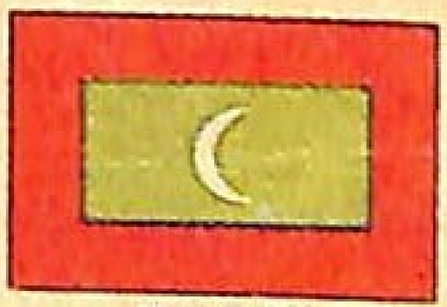
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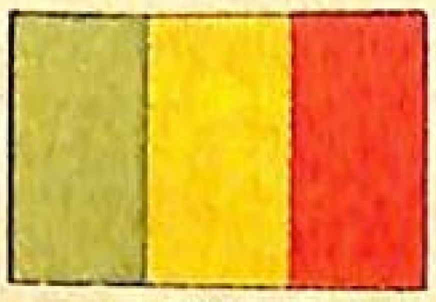
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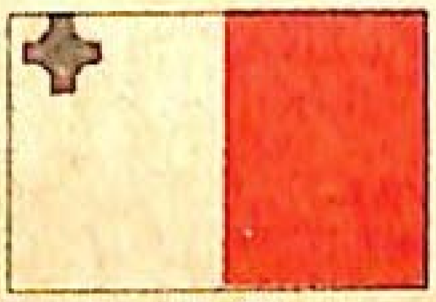
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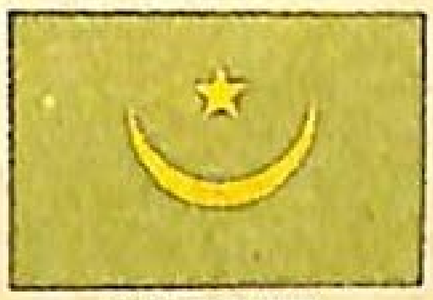
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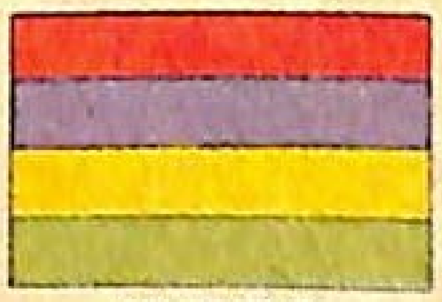
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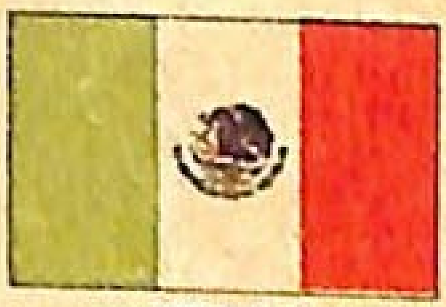
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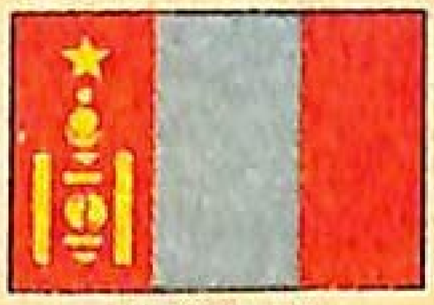
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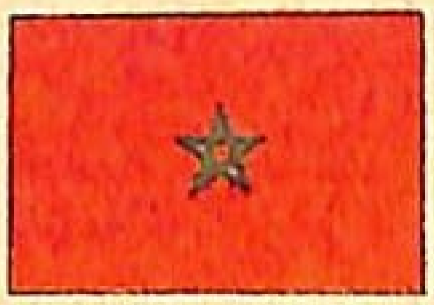
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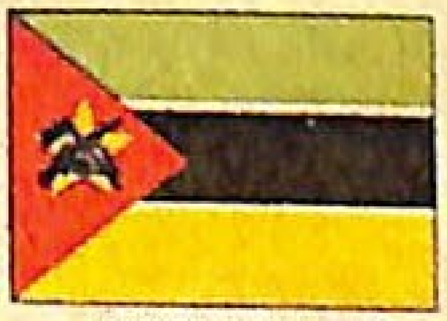
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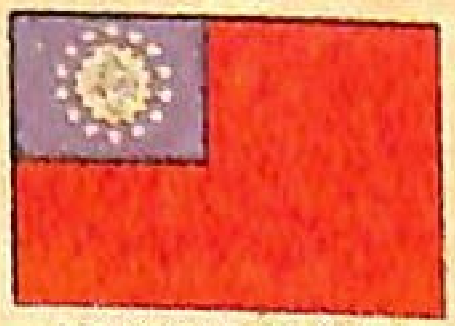
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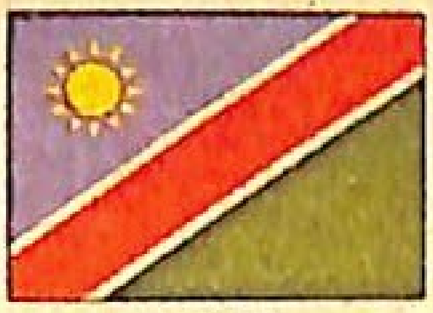
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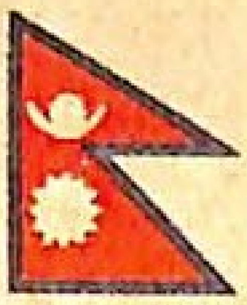
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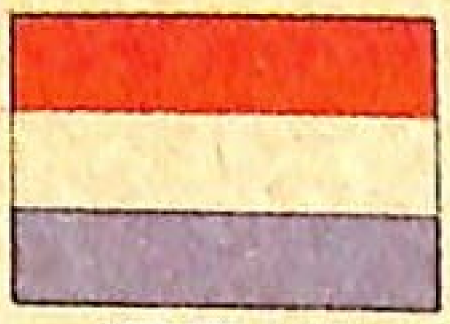
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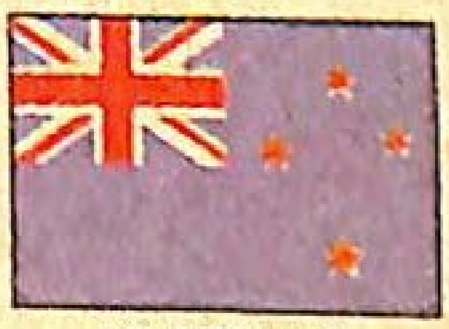
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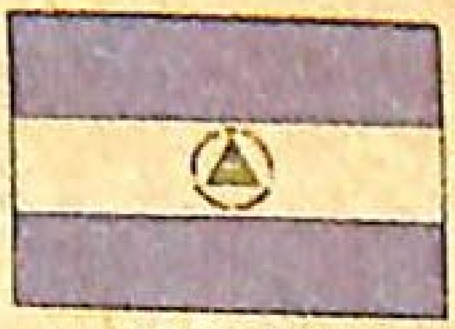
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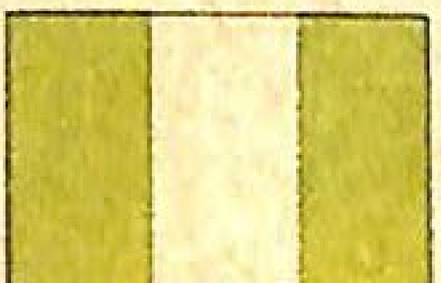

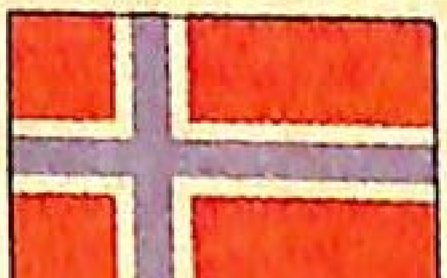

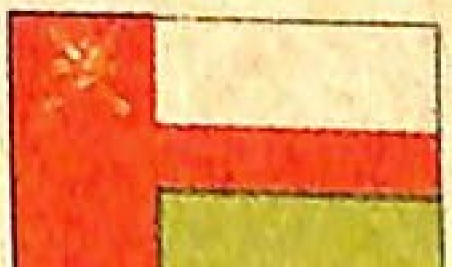

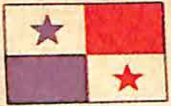
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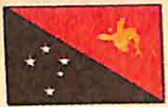
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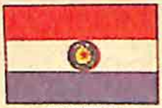
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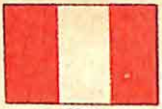
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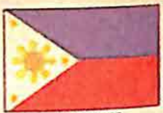
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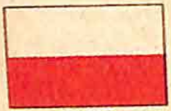
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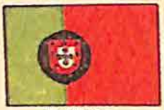
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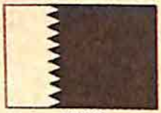
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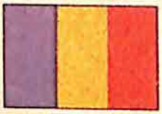
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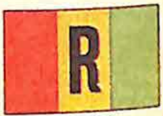
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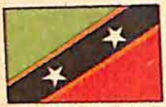
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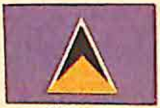
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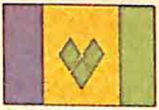
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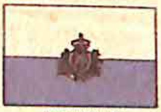
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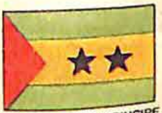
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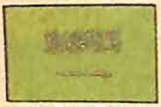
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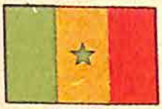
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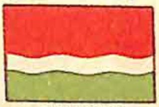
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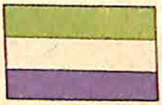
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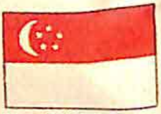
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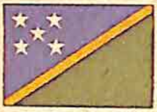
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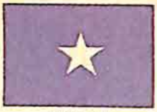
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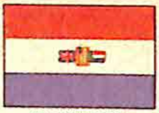
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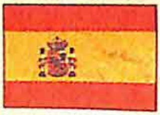
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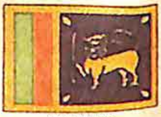
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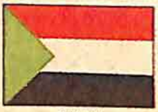
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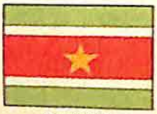
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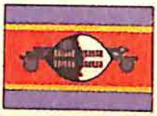
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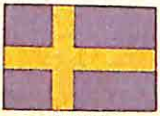
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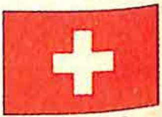
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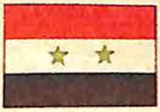
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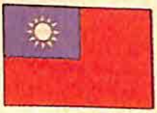
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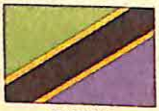
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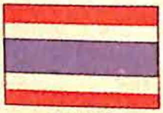
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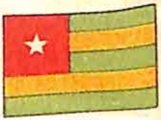
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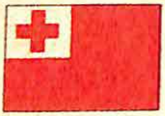
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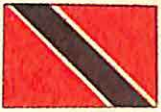
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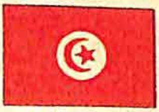
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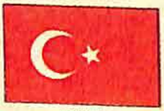
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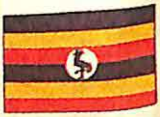
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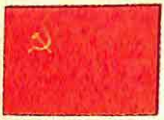
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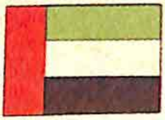
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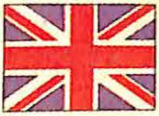
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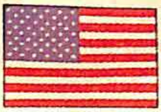
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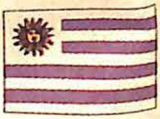
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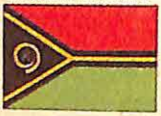
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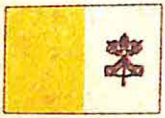
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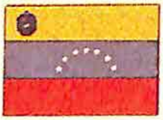
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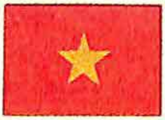
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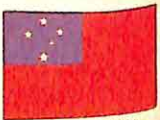
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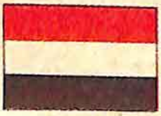
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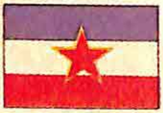
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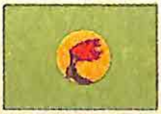
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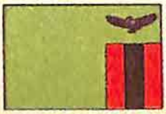
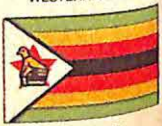

ZAMBIA


ZIMBABWE

2000: Middle Minoan period in Crete. Mycenae in Greece becomes a centre of civilization. Aryan settlements in India; Vedic civilization takes shape; The composition of the Rig Veda.

1995: Amenemht founds the 12th dynasty in Egypt.

1800: Hammurabi, the Babylonian Emperor, proclaims a code of law.

1790: Hyksos, an Asian tribe, dispossesses the 13th dynasty and occupies Egypt.

1580: Cretan civilization at its height.

1500: Flowering of Mycenaean civilization in Greece.

1480: Moses leads Israelites out of Egypt.

1400: Myceanaens destroy Knossus palace at Crete. Decay of Cretan civilization.

1380: Amenhotep (Amenophis IV) revolutionises Egyptian religion and proclaims a new religion.

1362: Rebellion in Egypt: Egypt loses her outer possessions.

1345: 19th dynasty in Egypt: Egypt recovers her former power.

1200: Philistines (Phoenicians) from north Mediterranean occupy Palestine. Etruscans, an Asian people, settle in Italy. Homeric siege of Troy by Greeks (?).

1027: Chou dynasty begins in China.

1013: Rise of the Israelites in Palestine. David (1013-973) establishes Israelite hegemony.

1000: Egypt ceases to be a power. Epic civilization in India - composition of the great epics, Ramayana and Mahabharata. Phoenicians develop alphabetical writing.

850: Phoenicians found the city of Carthage on the northern coast of Africa.

753: Traditional foundation of the city of Rome.

621: Draco publishes Athenian laws*.

610: Ionian (Sanskrit *Yavana*, Persian and Arabic *Yunani)* city states on the west coast of Asia Minor.

604: A new empire in Mesopotamia with Babylon as capital.

594: Solon reforms Athenian constitution.

586: Babylonians capture Jerusalem.

560: Croesus, reputed to be the richest king of his times, rules Lydia. Lydians issue the earliest known systematic currency.

538: Cyrus founds the Persian Empire and captures Babylon.

509: Foundation of the Roman Republic.

490: Battle of Marathon; Athenians defeat Persians.

483: Death of Buddha in India.

480: Battle of Thermopylae - Spartans under Leonidas wiped out by Persians; Battle of Salamis (naval battle) - Athenians under Themistocles rout the Persians.

479: Battle of Plataea and Mycale - Greek victories over Persia by land and sea respectively; Athenian supremacy in Greece begins; Final end of Persian threat; Death of Confucius in China.

461: Pericles comes to power in Athens.

431 Outbreak of Peloponnesian War between Athens and Sparta.

425: Death of Herodotus.

404: Athenians surrender to Sparta; Beginning of Spartan supremacy in Greece.

399: Execution of Socrates.

371: Battle of Leuctra - Thebans defeat Spartans and become the leaders of Greece; Theban hegomony.

347: Death of Plato.

338: Battle of Chaeronea; Philip II of Macedon defeats the Greek city states and becomes supreme in Greece.

336: Alexander becomes the King of Macedon.

334: Battle of Granicus; Alexander's first victory over the Persians.

333: Battle of Issus; Alexander's second victory over Darius of Persia.

332: Alexander captures Tyre and occupies Egypt.

331: Battle of Arbela (Gaugamela); Alexander finally defeats Persians.

330: Death of Darius and the end of Persian Empire.

326: Battle of Hydaspes; Alexander defeats Porus of India and conquers the Punjab.

323: Death of Alexander at Babylon; Ptolemy I founds dynasty in Egypt; Alexandria (in Egypt) becomes the intellectual centre of the world.

321: Chandragupta Maurya establishes the Mauryan Dynasty in India; Death of Aristotle.

312: Seleucus I founds dynasty in Asia.

275: Battle of Beneventum; Rome finally defeats Pyrrhus and becomes undisputed master of all Italy.

274: Asoka becomes Emperor of India.

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* A stiff code of conduct with severe punishments for minor breaches – hence the term *draconian*.

264: Beginning of the First Punic War between Rome and Carthage.

241: End of the First Punic War; Sicily becomes the first province of Rome.

221: Shih Huang Tih completes conquest of all Chinese states.

218: Beginning of the Second Punic War: Hannibal, the Carthagian general attacks Rome.

214: The construction of the Great Wall of China.

213: Burning of Chinese classics.

212: Romans capture Syracuse; Archimedes killed.

202: Eastern Han dynasty in China; Hannibal defeated by the Roman general, Scipio Africanus.

201: End of Second Punic War; Rome dominates western Mediterranean.

196: Rome conquers Macedon and Greek city states.

149: Outbreak of Third Punic War.

146: Romans invade Carthage and make it a Roman province.

124: Establishment of a college in China to train civil servants.

110: China under Emperor Wu Ti expands towards south east.

106: Marius and Sulla become Roman leaders.

60: The formation of the First Triumvirate; Pompey, (Julius) Caesar, Crassus.

58: Caesar begins conquest of Gaul.

55: Caesar's conquest of Britain.

53: Crassus, defeated by Persians, falls into disgrace in Rome.

49: Caesar crosses the Rubicon and challenges Pompey.

48: Battle of Pharsalus; Caesar defeats Pompey.

46: Caesar reforms the calendar, later known as the Julian Calendar.

44: Murder of Caesar.

43: The formation of the Second Triumvirate; Antony, Octavian (Augustus), Lepidus.

42: Battle of Philippi; Antony and Octavian defeat Brutus and his associates.

31: Battle of Actium; Octavian defeats Antony and Cleopatra and becomes the Emperor of Rome.

27: Roman Senate confers the title of *Augustus* on Octavian; Octavian becomes *Caesar Augustus.*

4: Birth of Jesus Christ?*

A.D. 6: China institutes Civil Service Examination.

14: Augustus dies.

29: Crucifixion of Christ.

64: Great Fire of Rome.

70: Emperor Titus suppresses Jewish revolt and destroys Jerusalem.

79: Vesuvius volcano erupts and destroys the famous Roman towns of Pompeii and Herculaneum.

80: Completion of the Roman Colosseum.

97: Chinese penetrate into Persian Gulf.

117: Roman Empire reaches its greatest extent under Hadrian.

180: Death of Marcus Aurelius. Beginning of the decline of the Roman Empire.

212: Emperor Caracalla gives Roman citizenship to all the free citizens of the empire.

220: Period of Civil War in China begins.

230: Emperor Sujin in Japan organizes a Japanese empire.

251: Goths defeat and kill the Roman emperor Decius.

284: Diocletian becomes emperor of Rome; persecution of Christians reaches its climax.

306: Constantine becomes emperor.

313: Edict of Milan gives tolerance to Christians in the Roman empire.

320: The Gupta dynasty rises in India.

325: The Council of Nicaea, first General Council of the Christian Church.

378: Battle of Adrianople; Goths defeat and kill Eastern Roman Emperor Valens.

395: Final division of the Roman Empire into Eastern and Western empires.

410: Alaric the Goth captures and destroys Rome. This is taken to be the end of the Roman Empire.

415: Visigoths begin conquest of Spain.

429: Vandals begin conquest of North Africa.

452: Attila invades Italy.

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* Dating 4 B.C. as the year of Christ's birth has always been a matter of dispute among chronologers and hence it is given with a question mark. Christian Era commenced on January 1, 754 AUC (ab urbe condita - "from the foundation of the city of Rome)."

Dionysius Exiguus, the Scythian monk who invented AD reckoned the birth of Christ to have occurred in 753 AUC; but Christ was born under Herod the Great according to the Gospels; ie., at the latest in 750 AUC.

This dating though disputed has continued in use to the present day and, as a result, the Nativity is reckoned to have taken place in or shortly before the year 4 B.C. when Herod died.

455: Rome pillaged by Vandals.

476: Romulus Augustulus, the last Western Roman emperor, deposed by Odovacar; The end of Western Roman Empire.

481: Clovis becomes the King of Franks and occupies Gaul.

527: Accession of the Eastern Roman Emperor Justinian I.

529: Publication of the Civil Code by Justinian.

538: Justinian builds the famous Christian church Hagia Sophia at Constantinople.

570: Birth of Mohammed.

589: Unification of China under the Ch'en dynasty.

618: Tang dynasty comes into power in China.

622: Hejira or flight of Mohammed from Mecca to Medina; Beginning of the Mohammedan era.

632: Death of Mohammed; Accession of Abu Baker, the first Caliph.

636: Muslims occupy Damascus.

638: Capture Jerusalem.

641: Persia conquered by Muslims.

643: Muslims occupy Alexandria.

698: Muslims invade Carthage.

718: The greatest Muslim attack on Constantinople fails.

732: Advance in Spain halted by Charles Martel.

750: Beginning of Abbasid Caliphate (replacing Ommayyads).

786: Accession of Haroun-al-Rashid in Baghdad.

800: Coronation of Charlemagne as Holy Roman Emperor.

814: Death of Charlemagne and the division of his empire.

827: Muslims invade Sicily.

840: Muslims capture Bari and occupy Southern Italy.

843: Treaty of Verdun; Final division of the Carolingian Empire founded by Pipin, King of France, in A.D. 751; Beginning of France and Germany as separate states.

862: Rurik founds Viking state in Russia, first at Novgorod, later at Kiev.

866: Fujiwara period begins in Japan.

868: The first printed book in China.

899: Death of Alfred the Great in England.

900: Ghana in North West Africa at the height of its power.

960: Beginning of Sung dynasty in China.

982: Norsemen discover Greenland.

987: Hugh Capet, King of France, founds Capetian dynasty.

1000: Leif Ericsson discovers North America.

1016: Canute becomes King of England.

1066: William I, Duke of Normandy, conquers England.

1069: Reforms of Wang-An-Shih in China.

1071: Battle of Manzikert; Seljuks destroy Byzantine army.

1073: Gregory VII becomes Pope.

1075: Seljuk Turks capture Jerusalem.

1086: Compilation of Domesday Book in England.

1095: Council of Clermont; Pope Urban II preaches First Crusade.

1099: First Crusade under Godfrey of Bouillon takes Jerusalem.

1148: Second Crusade fails to capture Damascus.

1152: Accession of Emperor Frederick Barbarossa.

1154: Henry of Anjou establishes the Plantagenet dynasty in England.

1161: Explosives used in warfare in China.

1176: Battle of Legnano; Frederick Barbarossa defeated by the Lombard League; Italian states become autonomous.

1185: Kamakura period in Japan; Epoch of feudalism in Japan which lasts until 1333.

1189: Third Crusade under Frederick Barbarossa, Philip Augustus of France and Richard the Lion Heart of England.

1192: End of the Third Crusade without regaining Jerusalem.

1204: Fourth Crusade captures Constantinople.

1206: Jengiz Khan becomes King of the Mongols and overruns Central Asia.

1212: Battle of Las Navas de Tolosa: Spaniards win decisive victory over the Muslim Moors.

1215: Fourth Lateran Council. Papal authority reaches its zenith; Magna Carta in England.

1237: Mongols invade Russia.

1260: Kublai Khan rules in China.

1291: The League of Uri; Beginning of the Swiss Confederation; Crusades end.

1309: Papacy moves to Avignon; Beginning of the *Babylonian Captivity*.

1314: Battle of Bannockburn; Robert Bruce

of Scotland defeats the English army.
1336: Ashikaga period in Japan.
1338: Beginning of the Hundred Years' War between England and France.
1346: Battle of Crecy; English victory over the French and the Scots.
1348: Black Death reaches Europe.
1356: Battle of Poitiers; Black Prince of England defeats the French.
1360: Peace of Bretigny; Edward III of England gains territories in France.
1362: English made the official language in England.
1363: Timur (Tamerlane) begins his career of conquest in Asia.
1368: Ming dynasty in China.
1377: Pope returns to Rome; End of Babylonian Captivity.
1381: Peasants' Revolt in England.
1398: Timur invades North India.
1415: Battle of Agincourt; Henry V of England gains a decisive victory over France.
1429: Joan of Arc leads the French army and takes Orleans.
1431: Joan of Arc burnt at stake as a witch.
1453: Turks capture Constantinople and end the Byzantine or the Eastern Roman empire; End of the Hundred Years' War.
1455: First battle of St. Albans; Beginning of the Wars of the Roses in England.
1469: Marriage of Ferdinand of Aragon with Isabella of Castile and the formation of the modern kingdom of Spain.
1485: Battle of Bosworth Field. Beginning of Tudor period in England.
1488: Bartholomew Diaz rounds Cape of Good Hope.
1492: Christopher Columbus discovers the West Indies.
1497: John Cabot discovers Newfoundland.
1498: Vaso da Gama reaches Calicut by sea.
1499: Amerigo Vespucci charts part of the South American coast.
1500: Portuguese Admiral Pedro Alvares Cabral discovers Brazil.
1517: Martin Luther begins the Reformation; Turks conquer Egypt.
1520: Suleiman the Magnificent becomes Sultan of Turkey; Turkish power at its height.
1521: Cortes conquers Mexico. Turks capture Belgrade.
1526: Battle of Panipat; Babar founds Mogul Empire in India.
1532: Francisco Pizarro conquers Peru.
1533: Ivan IV (the Terrible) becomes Czar of Russia.
1534: Act of Supremacy; Henry VIII assumes control over English Church.
1542: First Portuguese sailors reach Japan.
1545: Opening of the Council of Trent.
1556: Akbar becomes Mogul Emperor.
1557: Macao becomes a permanent Portuguese port in China.
1558: Elizabeth I becomes Queen of England.
1577: Drake begins voyage round the world returning by 1580.
1582: Pope Gregory XIII introduces (New style) Gregorian Calendar.
1585: Hideyoshi, dictator of Japan, unifies the country.
1588: English defeat the Spanish Armada.
1598: Edict of Nantes; French Protestants given liberty of worship; End of French Wars of Religion.
1600: English East India Company formed.
1602: Dutch East India Company founded.
1603: Union of English and Scotish Crowns; James VI of Scotland becomes James I of Britain.
1611: Publication of the Authorised Version of the English Bible.
1613: Michael Romanov becomes Czar of Russia and establishes the Romanov dynasty.
1620: Pilgrim Fathers settle in New England.
1624: Richelieu becomes Chancellor in France.
1628: Petition of Rights in England.
1636: Japanese forbidden to go abroad.
1641: Japanese exclude all foreigners from Japan, except small Dutch trading ships.
1642: Outbreak of the English Civil War between Royalists and Cavaliers.
1644: Ching dynasty (Manchu) in China.
1649: Charles I of England executed; Cromwell becomes Protector of England.
1652: The Dutch establish Cape Colony.
1660: Restoration of monarchy in Britain; Charles II founds the Royal Society.
1661: Mazarin, who succeeded Richelieu as the Chancellor of France, dies; Louis XIV takes over the government in person.
1665: Great Plague of London.
1666: Great Fire of London.
1688: Glorious Revolution in England; James

II abdicates the British throne.
1689: Bill of Rights in England.
1694: Founding of the Bank of England.
1696: Peter the Great becomes Czar of Russia.
1701: War of Spanish Succession begins.
1704: Marlborough wins the Battle of Blenheim.
1721: Robert Walpole becomes the first Prime Minister of England.
1739: Nadir Shah of Persia sacks Delhi; War of Jenkins' Ear begins between Spain and Britain.
1740: Frederick the Great becomes King of Prussia; Maria Theresa succeeds to the Austrian throne; Beginning of the War of Austrian Succession.
1751: Clive takes and holds Arcot in India and checks French advance; Chinese conquest of Tibet.
1756: Seven Years' War begins.
1757: Clive conquers Bengal.
1760: Battle of Wandiwash; The English defeat the French in India.
1762: Catherine II becomes Czarina in Russia.
1770: James Cook discovers New South Wales.
1776: American Declaration of Independence.
1787: The drafting of the American Constitution.
1789: French Revolution begins; Storming of the Bastille (July 14); George Washington becomes the first President of USA.
1792: France becomes a Republic.
1793: Louis XVI beheaded.
1795: Napoleon Bonaparte disperses Paris mob (Oct. 5).
1804: Bonaparte becomes Emperor.
1805: Battle of Trafalgar and Nelson's death; Battle of Austerlitz (Dec. 2).
1807: Napoleon controls all Europe; Slave trade abolished in the British Empire.
1808: Peninsular War begins.
1812: Napoleon's retreat from Moscow.
1815: Battle of Waterloo, Napoleon sent to St. Helena.
1823: President of USA announces "Monroe Doctrine."
1832: First Reform Bill in England.
1833: First British Factory Act.
1837: Queen Victoria succeeds to the British throne.
1840: Introduction of penny postage in England.
1846: Repeal of the Corn Laws and the resignation of Peel.
1848: Louis Philippe of France abdicates; Second French Republic proclaimed; *Marx and Engels* publish *the Communist Manifesto;* Gold discovered in California.
1849: Britain annexes the Punjab.
1851: Submarine telegraph cable between Dover and Calais; Discovery of gold in Australia.
1852: Napoleon III becomes Emperor of France.
1853: Commander Perry lands in Japan.
1854: Crimean War.
1856: Livingstone completes journey across Africa.
1857: First war of Indian Independence.
1858: British Crown assumes Government of India.
1861: Abraham Lincoln becomes President of the United States; American Civil War.
1862: Bismarck becomes the Chancellor in Prussia.
1865: Abolition of Slavery in USA; Assassination of Lincoln.
1867: Dominion of Canada established, Russia sells Alaska to America.
1868: Shogunate abolished in Japan; Meiji period of rapid westernization under imperial leadership begins.
1869: Opening of the Suez Canal.
1870: Promulgation of the Doctrine of Papal Infallibility.
1871: Franco-Prussian War, Defeat of France by Prussia; Trade Unions in Britain legalised.
1874: Disraeli succeeds Gladstone as Prime Minister.
1875: England purchases Suez Canal shares.
1886: Britain annexes Upper Burma; Completion of Canadian Pacific Railway; Discovery of gold in Transvaal.
1894: Japan declares war on China.
1895: Japan occupies Formosa and Korea.
1899: Boer War begins.
1900: Australian Commonwealth proclaimed.
1902: End of the Boer War.
1904: Russo-Japanese War begins.
1905: Russo-Japanese War ends by the Treaty of Portsmouth; Norway separates from Sweden.

1906: First Parliament in Russia.

1907: New Zealand becomes a Dominion.

1909: Union of South Africa formed.

1911: Chinese Revolution; Amundsen reaches South Pole (Dec. 14).

1912: China becomes a Republic under Sun yat Sen; The Titanic disaster.

1914: Archduke Francis Ferdinand of Austria assassinated at Sarajevo (June 28); Serbia suspected of complicity; Austria declares war on Serbia (July 28); The beginning of the first World War; Germany declares war on Russia (Aug. 1), on France (Aug. 3), and invades Belgium (Aug. 3); England declares war on Germany (Aug. 4); Austria declares war on Russia (Aug. 6); Japan declares war on Germany (Aug. 23). Battle of the Marne between France and Germany (Sept. 6–10); German advance halted. Russia declares war on Turkey (Nov. 2); England and France follow suit (Nov. 5).

1915: Germans start air attacks and submarine blockade against Britain; Germans sink American ship Lusitania (May 7).

1916: Battle of Verdun (Feb. 21–July 11). France stops German advance; Battle of Tannenburg; Russian armies humbled by Germany (Aug. 25); Battle of Jutland; Britain breaks German naval strength (May 31), Battle of Somme. France keeps her lines against Germany (July 1–Nov. 18); Lloyd George, Prime-minister, forms war cabinet in Britain; Germans advance on the Eastern front; Vilna falls (Sept. 18). Rasputin, the Russian monk, assassinated by Prince Felix Yussupov (Dec. 30).

1917: Russian troops mutiny in Petrograd (March 10); Provisional government formed in Russia – Czar Nicholas II abdicates (March 15), USA declares war on Germany (April 16), Bolshevik Revolution begins in Russia (Nov. 6), Armistice concluded between the Revolutionary Government in Russia and Germany (Dec. 5).

1918: Treaty of Brest-Litvosk between Germany and Bolshevik Russia (March 3). The British capture Jerusalem (Dec. 8), Czar, Czarina and children executed at Ekateringburg. Revolution breaks out in Germany; Emperor William II abdicates; German Republic proclaimed (Nov. 9).

1919: Peace conference opens in Paris (Jan. 18); Benito Mussolini founds Italian Fascist Party; Jalianwallabag massacre in India (April 13); Treaty of Versailles signed (June 28).

1920: First meeting of the League of Nations.

1921: Formation of the Irish Free State.

1922: Mussolini marches on Rome and the Fascist Party takes over the Government of Italy.

1923: Turkish Republic proclaimed under Kemal Pasha.

1924: The first Labour Ministry in Britain under MacDonald; Greece becomes a Republic; Lenin dies (Jan. 21).

1927: Col. Lindbergh flies across the Atlantic.

1928: Capt. Kingsford Smith flies across the Pacific.

1929: Wall Street Crash; The beginning of the Great Depression.

1933: Hitler appointed Chancellor by Hindenburg; German Reichstag set on fire (Feb. 27).

1934: Austrian Chancellor Dollfuss murdered (July 25); Hindenburg dies and Hitler becomes dictator.

1936: Italians occupy Addis Ababa; Civil War breaks out in Spain; King Edward VIII of England abdicates; Duke of York succeeds King Edward as King George VI.

1938: Munich Agreement between Chamberlain (England), Daladier (France), Hitler (Germany) and Mussolini (Italy).

1939: General Franco establishes dictatorship in Spain (Feb.); Germans invade Poland; Germans and Russians partition Poland; Second World War begins (Sept.).

1940: Germany invades Denmark, Norway, Holland, Belgium and Luxembourg; British evacuation from Dunkirk; Germans occupy Paris; Russians occupy Lithuania, Latvia and Estonia; France surrenders to Germany (June).

1941: Germany attacks Russia (June); Japanese attack on Pearl Harbour (Nov. 7); Japanese occupy Malaya, Philippines and Sarawak.

1942: Japanese navy defeated by US fleets off Midway Island (June); Battle of El Alamein (October 23); The Allies rout German forces; The Germans retreat.

1943: Axis Powers – Germany, Italy and Japan –in retreat over all the war zones; Mussolini resigns; Italian Fascist Party is dissolved; Churchill, Roosevelt and Stalin,

leaders of the victorious Allies, meet at Teheran.
1944: Allies enter Rome; Allies liberate France, Belgium, Holland and Bulgaria.
1945: Americans invade Okinawa; Japanese Cabinet resigns: President Roosevelt dies (April 12); Mussolini and his mistress shot dead by Italian partisans (April 28); Hitler commits suicide (April 30); German forces surrender to Allied armies (May 8).

POST SECOND WORLD WAR

The signing of the United Nations Charter in 1945 was a landmark in man's quest for peace. After 40 years of its existence, the world community is now taking stock of its achievements and failures. (For U.N. see chapter on International Organizations).

1945: The UN Charter signed at San Francisco on June 26; Labour Party wins British elections (July 26); Atomic bomb dropped on Hiroshima (Aug. 6); Second atom bomb dropped on Nagasaki (Aug. 9); Japan surrenders to USA; The end of the Second World War; Trial of major war criminals opens at Nuremberg (Nov. 20).

1946: The first regular session of the UN Assembly held in London (Jan.); Trygve Lie elected the first Secretary General; Formal winding up of the League of Nations; Meeting of the UN General Assembly in New York (Oct. 23); Nuremberg sentences on Nazis carried out; Goering commits suicide.
1947: Indonesia becomes free; India and Pakistan assume Dominion status (Aug. 15); The partition of Palestine approved by the UN; King Michael of Romania abdicates; Romania becomes a Republic.

1948: Burma becomes a Republic; Gandhiji assassinated (Jan. 30); Ceylon becomes independent; C. Rajagopalachari succeeds Mountbatten as the Governor General of India; Jews proclaim the new State of Israel in Palestine.

1949: General Mao-Tse-Tung proclaims the People's Republic of China; Chinese Nationalist Government sets up headquarters in Formosa; United State of Indonesia comes into being.
1950: The proclamation of the Republic of India (Jan. 26); The Korean War begins; George Bernard Shaw dies aged 94 (Nov. 2).
1951: Libya becomes independent.
1952: King George VI of Great Britain dies and is succeeded by his daughter Elizabeth II; Olympic Games open at Helsinki (July 1).
1953: Stalin dies aged 74 (March 6); Dag Hammarskjold elected Secretary General of the UN; Hillary and Tensing conquer Everest (March 29); Korean armistice signed.
1954: Formation of the Federation of Rhodesia and Nyasaland; French settlements in India pass under Indian control.
1955: Afro-Asian Conference at Bandung; Albert Einstein dies (April 18).
1956: Sudan becomes an independent Republic; Pakistan proclaims itself an Islamic Republic; France leaves Indo-China; Col. Nasser becomes President of Egypt; Nationalisation of Suez Canal by President Nasser; Revolt in Hungary against communist regime; Russia sends troops to Hungary to quell the revolt.
1957: Saar added to the German Federal Republic; Polish Communist Party under Gomulka comes to power in Poland; Ghana becomes independent; Tunisia becomes a Republic; First Earth satellite (Sputnik I) launched by Russia.

1958: The first American Earth satellite Explorer I launched; Iraq becomes a Republic; French Guinea becomes an independent Republic.

1959: Batista Government in Cuba overthrown by Fidel Castro; Alaska becomes the 49th State of USA; Inauguration of the Fifth French Republic under De Gaulle; the Chinese occupy Tibet; Dalai Lama flees to India; Bandaranaike, Prime Minister of Ceylon, assassinated; Archbishop Makarios elected first President of Cyprus.

1960: Cameroon, Togo, Belgian Congo, Ghana, Cyprus and Somalia become independent Republics. Congo (Brazzaville), Chad, Central African Republic and Malagasy become independent. Olympics at Rome (Aug.); Nigeria becomes an independent Republic in the Commonwealth.

1961: Rwanda and Burundi in Africa become Republics; Sierra Leone and S. Cameroon become independent; South Africa becomes a Republic and withdraws from the Commonwealth; Conference of non-aligned nations at Belgrade; Syria secedes from the United Arab Republic; Tanganyika becomes independent within the Commonwealth; India annexes the Portuguese enclaves Goa, Daman and Diu.

1962: General Ne Win seizes power in Burma; China begins attack on India's northern frontier (Sept. 19); U Thant elected Secretary General of United Nations (Nov. 30).

1963: China and Pakistan sign frontier treaty; Egypt, Syria and Iraq form Arab Federation; Malaya, Singapore and South Borneo form Malaysian Federation; The assassination of President John F. Kennedy in Dallas, Texas (Nov. 22); Zanzibar becomes independent.

1964: Agreement signed between Tanganyika and Zanzibar forming a new State, Tanzania; Jawaharlal Nehru Prime Minister of India, dies (May 27); Malta becomes independent; Soviet Premier Krushchev ousted; Alexei Kosygin becomes Premier and Leonid Brezhnev, Secretary of the Communist Party; Olympiad at Tokyo (Oct.).

1965: Field Marshal Ayub Khan is elected President of Pakistan; Indonesia withdraws from UN (Jan. 25); Sir Winston Churchill dies (Jan. 24); Dr. Albert Schweitzer dies (Aug. 15); Rhodesia seizes independence; Mobutu takes over in a bloodless coup in the Congo.

1966: Army takes over the Government of Ghana, deposes President Nkrumah; Sukarno (Indonesia) hands over power to Army Chief Suharto (Mar. 12); Guyana (Guiana) becomes independent.

1967: India signs International Space Treaty in Moscow; Gen. Suharto becomes President of Indoneisa; Konrad Adenauer, former West German Chancellor, dies; Nasser blocks gulf of Aquaba, Israel's vital sea outlet; Eastern Nigeria secedes to become Biafra Republic. Israel strikes a pre-dawn blow on UAR, Syria and Jordan and captures Gaza, Sinai and Jerusalem. Fighting ends in Suez Canal area with acceptance of cease-fire; Russia celebrates the 50th anniversary of the Bolshevik Revolution.

1968: South Pacific Island of Nauru and Mauritius become independent. Martin Luther King assassinated (Mar. 5); Soviet Union and Warsaw Pact countries' forces invade Czechoslovakia; Swaziland becomes independent; the 19th Olympic Games open in Mexico City (Oct. 9); Equatorial Guinea becomes independent.

1969: U.S. astronauts Neil Armstrong and Edwin Aldrin set foot on the Moon (July 21). President Dr. Ho Chi Minh (79), the Father of North Vietnam, passes away (Sept. 4).

1970: The 30-month-fighting for a separate Biafra collapses. Bertrand Russell (97) passes away (Feb. 3); President Gamal Abdel Nasser (52) dies (Sept. 29); Charles de Gaulle (79), former President of France, dies (Nov. 10); Defence Minister Hafez Assad seizes power in Syria (Nov. 14); Soviet Lunokhod 1 lands on the Moon. (Nov. 17); Awami League led by Sheik Mujibur Rahman gets absolute majority in Pakistan's first general election.

1971: Inauguration of the Aswan Dam in Egypt (Jan. 15); Apollo 14 astronauts Shepard and Mitchell land on the Moon (Feb. 2); Mujibur Rahman declares Bangladesh independent (Mar. 26); Mujibur Rahman arrested by the Pakistan army; Russia sends up Salyut I; Soyuz X links with Salyut in space (April 19); Apollo 15 launched (Aug. 8); China admitted to the UN; Taiwan expelled (Oct. 25); Union of Arab Emirates formed (Dec. 2); Pakistan attacks India from the west (3); India recognises Bangladesh; Pakistan army in Bangladesh surrenders (16); Indo-Pakistan war ends (17); Yahya Khan resigns Pakistan Presidentship, Bhutto becomes President (20); Dr. Kurt Waldheim appointed UN Secretary General.

1972: Bhutto releases Mujibur Rahman (Jan. 8); Pakistan leaves Commonwealth (Apr. 21); Fourth Conference on non-aligned nations meets in Georgetown, Guyana (Aug. 8); Twentieth Olympics open at Munich (26); Bloodbath in Olympic village - Arab guerillas kidnap and kill Israeli sportsmen; Nixon elected President for a second term (Nov. 8).

1973: Britain joins E.C.M. (Jan. 1); Awami League led by Mujibur Rahman wins first election in Bangladesh (Mar. 2); Pablo Picasso dies (April 8); Bahamas becomes independent (July 10); Afghanistan ends monarchy and becomes a Republic (18); W. Germany, East Germany and Bahamas become U.N. members (19); War breaks out in West Asia between Israel and Egypt and Syria (Oct. 6); Ceasefire in West Asia (22).

1974: Mohommadulla elected President of Bangladesh (Jan. 24); Libya nationalises American oil companies (Feb. 11); Pakistan recognises Bangladesh (22); Emperor Haile Selassie deposed (27); Jigme Singye Wangchuk crowned King of Bhutan (June 2); Cyprus army overthrows President Makarios (July 15); Nixon resigns presidency; Gerald Ford takes over as the 38th President of USA (Aug. 9); UN admits Bangladesh, Guinea-Bissau and Grenada as members; Labour wins British elections with a narrow majority (Oct. 11); U. Thant, former UN Secretary General, dies in Burma (25); Malta becomes a republic (Dec. 15).

1975: Mujib assumes full powers as President; One-party rule in Bangladesh (Jan. 25); Margaret Thatcher elected first woman leader of the British Conservative Party (Feb. 11); King Faisal of Saudi Arabia assassinated (25); Taiwan's President Chiang Kaishek dies (April 5); Saigon surrenders to communists (30); Mrs. Junko Tabei (36) of Japan becomes the first woman mountaineer to scale Mt. Everest (May 17); Suez Canal is reopened after eight years (5); Mozambique becomes free after nearly 500 years' Portuguese rule (July 6); Sao Tome and Principe Islands off the west coast of Africa achieve independence from Portugal (12); Soviet 'Soyuz' and American 'Apollo' space ships link up in space (17); Army coup in Bangladesh; Mujibur Rahman killed; new regime under Khondekar Mushtaq Ahmed (Aug. 15); Israel signs agreement with Egypt (Sept. 1); Papua New Guinea becomes free (15); Special UN session adopts plan for new world economic order (16); The Nobel Peace Prize goes to the father of Soviet hydrogen bomb, Dr. Sakharov (Oct. 9); 'Venus-9' softlands on planet Venus while module becomes a satellite; Arnold Toynbee dies (22); Angola becomes free from Portuguese rule; Spanish dictator Franco dies (Nov. 20); Juan Carlos becomes King of Spain (22); Laos becomes a Republic (Dec. 3).

1976: Military chiefs take over in Argentina, arrest Mr. Peron and dissolve Parliament (24); James Callaghan is the new British PM. Hua Kuo-feng is made Chinese Premier; Mrs. Gandhi and Brezhnev sign Moscow declaration to further friendship and co-operation (June 11); Vietnam is unified (24); Seychelles becomes independent (29); Airborne Israeli Commandos destroy Ugandan planes, kill 100 Ugandans and free Air France Air-bus passengers from hijackers at Entebbe, Uganda (July 4); Over 9000 die in Iran earthquake of June 26 and 28 (8); Exodus by 16 African nations as Montreal Olympics opens reduces the games to a virtual "White affair" (17). US Probe lands on Mars (20); Soares heads first democratic Government in Portugal (23); Non-aligned summit opens in Colombo (Aug. 16); Second World Hindi Conference in Mauritius; Khan Abdul Ghaffar Khan is released in Pakistan (28); Mao Tse-Tung dies; Hua Kuo-feng succeeds Mao (Sep. 9); Mao's widow Mrs. Chiang Ching and three top radicals arrested (12).

1977: Jimmy Carter sworn in President of the United States (Jan. 20); Mohammed Daud sworn in President of the Republic of Afghanistan (Feb. 17); Bhutto's People's Party wins landslide victory in Pak polls (March 8); Maj. Gen. Ziaur Rahman sworn in new Bangladesh President (April 21); Leonid Brezhnev elected Soviet President (June 16); Dijibouti becomes independent (27); Coup in Pakistan; General Zia-ul-Haq takes over; Bhutto deposed and arrested (July 5); Ruling (Sirimavo's) Party routed in Sri Lanka poll; Jayawardene becomes Premier (22); Bhutto released. Cyprus President Archbishop Makarios dies (Aug. 3); Ian Smith wins election in Rhodesia (Sept. 1); President Sadat of Egypt makes a historic visit to Israel (Nov. 19); Arab front against Egypt formed (Dec. 4); Charlie Chaplin dies (25).

1978: Jayawardene sworn in as the first President of Sri Lanka (Feb. 4); Military junta seizes power in Afghanistan (Apr. 27); Zia-ur-Rahman wins Bangladesh Presidential election (June 4); Argentina wins World Cup Football beating Holland, 3-1 (25); Coup in

Classical Wonders of the World

1. The Pyramids of Egypt. *These royal tombs which housed the dead Pharaohs of Egypt are about 70 in number and lie on the western side of the Nile beginning at Gizeb (Gisa) opposite Cairo and extend south for some 100 km or so. They represent 1200 years of Egyptian history.*

2. The Hanging Gardens of Babylon *were near the Euphrates River, in the palace of King Nebuchadnezzar, 100 km south of the present city of Baghdad, and not far from the eastern border of the Syrian Desert of Northern Arabia.*

3. The Temple of Artemis (Diana), *in Asia Minor at Ephesus, an ancient but now vanished city, was south of Smyrna. It was built in the fifth century B.C. by the Ionian cities, as a joint monument from plans drawn by the architect Ctesiphon.*

4. The Tomb of Mausolus, *King of Caria, in Asia Minor was at Halicarnassus, on the eastern side of the Aegean Sea. It was built of marble about 352 B.C. by Queen Artemisia.*

5. The Colossus at Rhodes *was a bronze statue of the Greek Sungod Helios, 70 cubits (about 30 m) high, erected by Charles of Lindus at the port of the City of Rhodes on the island of Rhodes in the eastern part of the Mediterranean Sea.*

6. The Statue of Zeus (Jupiter) *was in the valley of Olympia, province of Elis, 20 km or so inland from the west coast of the southern peninsula of Greece, which was then called the Peloponnesus.*

7. The Pharos of Alexandria, *a white marble lighthouse or watch-tower on the island of Pharos, in the port of Alexandria, Egypt was completed by King Ptolemy Philadelphus, 265-247 B.C.*

Other Wonders:

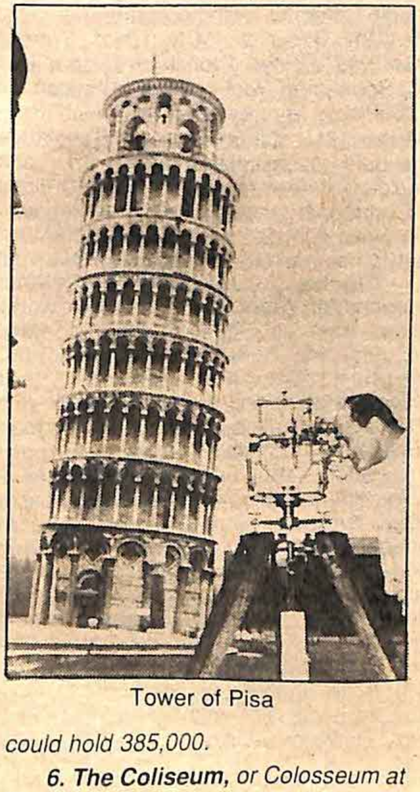
1. The Sphinx, *near Gizeb in Egypt, is a great wingless crouching lion hewn out of solid rock, 52.6 m long, and 20.1 m high. Between the two extended paws is a granite altar with inscriptions apparently indicating that it was built during the time of the Fourth Dynasty, around 2500 B.C.*

2. The Great Wall of China, *built in the third century B.C. extended along the northern frontier of the country, from the northern part of the Gulf of Chihli on the Yellow Sea, north of Peking, in a zigzag course, to Syning, on the border of Turkestan 3219 km long.*

3. Stonehenge *is a circular assemblage of huge, shaped stones in Salisbury plain about 145 km south west of London. The stones are arranged in two circles one within the other. 1800-1500 B.C.*

__4. The Catacombs at Rome__ were the sepulchers of the early Christians, and consisted of more than 40 groups of labyrinths, or galleries and chambers, covering 250 hectares, sometimes, going down to 5 storeys (21 m) below the surface of the ground.

__5. The Circus Maximus at Rome,__ built 605 B.C. by King Tarquin and rebuilt and enlarged by Julius Caesar could hold 385,000.



Tower of Pisa

__6. The Coliseum,__ or Colosseum at Rome, one of the largest amphitheatres in the world, was begun by the Emperor Vespasian and finished by the Emperor Domitian in 82 A.D. Fifty thousand persons could sit and 20,000 stand in it.

__7. Hagia Sophia__ or the Church of St. Sophia at Constantinople (Istanbul) was built as a Christian cathedral by the Roman Emperor Justinian in 531-538 A.D.

__8. The Leaning Tower of Pisa__ is one of the wonders of the Middle ages. It is a round, 8-storey bell-tower and was built of marble in 1154 A.D.; it is 57.3 m high. Architect: Bonannus of Pisa.

__9. The Porcelain Tower of Nanking__ was built in that ancient capital of South China in the early part of the 15th century.

__10. Angkor Wat__ or Nakhon Wat is a temple in Kampuchea, dedicated to Vishnu. It was built during the reign of Suryavarman II. The temple is situated south of the Angkor city which was the capital of ancient Cambodia. The city was built between 800 and 1200 A.D.

__11. The Alhambra at Granada__ is a fortress in southern Spain. It was built by the conquering Arab Moors who established a Caliphate in Spain with Cordoba as the first capital. When the Christians reconquered Cordoba, the Caliphate capital was removed to Granada.

__12. The Taj Mahal at Agra,__ popularly called The Taj, is a masterpiece of architecture. It is a mausoleum built by the Mughal Emperor Shah Jehan over the tomb of his wife, Empress Mumtaz Mahal. Its construction was started in 1631 and completed in 1653.

__13. Shwe Dagon__ or the Golden Pagoda is a Buddhist shrine in the outskirts of Rangoon in Burma. It was probably built late in the 13th century or early in the 14th. The Pagoda is especially sacred to Buddhists because it enshrines 8 of Buddha's hairs.

South Yemen (26); Army officers seize power in Mauritania (July 10); Commonwealth Games at Edmonton, Canada (Aug. 3); President Jomo Kenyatta of Kenya dies (22); Zia-ul-Haq sworn in as President of Pakistan (Sept. 16); Peter William Botha elected South African P.M. (26); Daniel Arap Moi elected President of Kenya (Oct. 6); Asian Games begin in Bangkok (9).

1979: International Year of the Child opens (Jan. 1); Shah leaves Iran (16); Ayatollah Khomeini returns to Iran after 14 years of exile (Feb. 1); Iran proclaimed Islamic Republic (Apr. 1); Bhutto executed (4); Greenland gets home rule (May 1); Margaret Thatcher becomes the first woman Prime Minister of Britain (4); Salt II agreement signed by Carter and Brezhnev in Vienna (June 18); Skylab plunges down off the western Australian coast (July 11); Mountbatten killed in an explosion off Ireland (Aug. 27); Sixth Non-Aligned Conference opens in Havana (Sept. 3); Emperor Bokassa of the Central African Empire overthrown in a coup (21); Army seizes power in Bolivia (Nov. 1); Iranian students occupy US Embassy in Teheran and holds the residents hostages (4); Muslim extremists seize Kaaba Mosque in Mecca (21); Hafizulla Amin of Afghanistan killed in a coup (Dec. 27).

1980: U.S. halts grain shipments to Russia in retaliation to the latter's occupation of Afghanistan (Jan. 5); Trudeau returns to power in Canada (Feb. 19); Army seizes power in Surinam (25); Jesse Owens, American Olympic Champion, dies (Mar. 31); Jean Paul-Sartre, French philosopher and writer dies (April 16); Free Zimbabwe born (17); U.S. attempt to free hostages in Iran fails (22); Marshal Tito of Yugoslavia dies (May 4); China successfully tests long-range rocket (ICBM) (18); Japanese P.M. Ohira dies; Suzuki new P.M. (June 12); Moscow Olympics begin (July 19); Polish workers wrest right to strike (Aug. 30); Hua resigns Premiership of China; Zhao Ziyang takes over (Sep. 6); Libya and Syria announce merger (10); Emergency proclaimed in Sri Lanka (Oct. 14); Mrs. Bandaranaike stripped of civic rights (16); Kosygin resigns as Soviet Premier (23); Ronald Reagan elected U.S. President in a landslide victory over Jimmy Carter (Nov. 5); Trial of 'Gang of Four' begins in Beijing (20); Coup in Upper Volta (25); Kosygin, former Soviet Premier, dies (Dec. 19).

1981: International Year of Disabled Persons opens (Jan. 1); Fifty-two American hostages fly out of Teheran after 444 days of captivity; Ronald Reagan takes charge as the 40th President of the United States (22); Polish P.M. Jozef Pinkowski resigns, Gen. Jaruzelski succeeds (Feb. 10); Political parties in Pakistan dissolved (Mar. 24); Reagan shot at (31); "Ordinary People" by Robert Redford wins Oscar for the best film (April 1); Space Shuttle Columbia, with two astronauts blasts off (12); Socialist Party Chief Francois Mitterrand elected French President (May 10); Pope John Paul shot at in Vatican City (13); Pierre Mauroy named French Prime Minister (21); Zia-ur-Rahman, Bangladesh President assassinated (30); Sri Lanka proclaims state of emergency (June 4); House of Commons passes Britain's controversial new Nationality Bill (5); Chinese Communist Party Chairman Hua Guofeng is replaced by Hu Yabobang (28); Belize becomes independent (Sept. 2); TGV, the world's fastest train at 270 km per hour makes inaugural trip from Paris to Lyons (22); Egyptian President Anwar Sadat assassinated during a military parade (Oct. 6); Hosni Mubarak sworn in as Egypt's fourth President (14); Socialist parties back in power in Greece (19); Cancun summit of 22 Government leaders ends on a note of discord (24); Antigua and Barbuda become independent (Nov. 1); U San Yu, retired Army General, succeeds U Ne Win as President of Burma (9); Javier Perez de Cueller, Peru, elected U.N. Secretary General to succeed Dr. Kurt Waldheim (Dec. 12); Army takes over in Poland; Solidarity leaders put in jail (13); Israel enacts new law to annex Golan Heights, occupied Syrian territory (14); Ft. Lt. Jerry Rawlings returns to power in Ghana (31).

1982: Egypt and Israel agree on final withdrawal of Israeli forces from Sinai (January 9); Sri Lanka shifts capital to Jayawardenapura (Feb. 15); South-South Conference opens in New Delhi; Tanzania's Julius Nyerere, receives the Third World Prize in New Delhi (22); Russia's Venus-13 lands on Venus (March 1); Charles Haughey becomes Irish

Prime Minister (9); Britain and the Vatican resume full diplomatic relations after four centuries (19); Switzerland decides to join U.N. (23); Lt. Gen. H.M. Ershad seizes power in Bangladesh; Argentina occupies Falkland Isles (Apr. 2); British fleet leaves for Falklands (6); 10,000 dead in the Chichonal volcano eruption in Mexico (7); A new constitution for Canada comes into force (April 17); Dr. Mahathir Mohammed wins Malaysian elections (23); Egypt officially gets back Sinai peninsula, 15 years after Israeli occupation (25); Britain recaptures South Georgia island off Falklands; Argentine Commander surrenders (26); U.K. Forces attack Falklands capital; Luis Alberto Monge becomes Costa Rican President (May 9); A manned Soviet spacecraft docks with orbiting Salyut-7 (15); U.K. troops land on Falklands (21); Argentina surrenders to Britain in the Falklands (June 15); Miguel De La Madrid elected President of Mexico (July 5); Soviet Union launches a woman into space for rendezvous with Salyut 7 (Aug. 18); P.L.O. pull out from Beirut begins (21); Lebanon's President-elect Bashir Gemayel (34) assassinated in a bomb explosion (Sep. 15); Mass massacre in two Palestinian refugee camps, Chatilla and Sabra, in W. Beirut (18). Helmut Kohl elected Chancellor of W. Germany (Oct. 1); Solidarity dissolved by an Act of Sejm in Poland (9); Halley's comet sighted for the first time since it last zipped by the Earth in 1910; Soviet President Leonid Brezhenv (75) dies (Nov. 10); Yuri Andropov succeeds Brezhnev; Space Shuttle Columbia releases Canadian satellite fulfilling the first commercial contract to launch satellites (12); World Premiere of Sir Richard Attenborough's 'Gandhi' in New Delhi (30); Sixtyone-year-old Barney Clark, given an artificial heart (Dec. 2).

1983: Bob Hawke becomes Australia's Prime Minister (Mar. 5); Seventh Non-aligned summit opens in New Delhi (7); Barney Clark, world's first and only recipient of a permanent artificial heart dies (23); Vietnam starts partial withdrawal from Kampuchea (May 2); Three South African freedom fighters hanged in Pretoria (June 9); Prime Minister Margaret Thatcher returns to power for another five-year team (10); Li Xiannian (78) elected Head of State in China (19); Phillippines opposition leader Benigno S. Aquino Jr. shot dead on arrival in Manila (Aug. 21); South Korean Boeing 747, with 269 persons abroad, shot down by Soviets into the Sea of Japan; Caribbean Islands of St. Kitts and Nevis become the world's newest nation (Sept. 19); Lech Walesa of Poland of the outlawed Solidarity Free Trade Union awarded the 1983 Nobel Peace Prize (Oct. 3); The former Japanese Prime Minister, Kakuei Tanaka gets prison term for accepting bribe from Boeing Co.; Prof. Subramanyam Chandrasekhar, shares 1983 Nobel Prize for Physics with fellow American Prof. William Fowler (19); The Turkish controlled area of Cyprus declares unilateral independence (Nov. 15); Gen. Hussain Ershad proclaims himself President of Bangladesh (December 11); Tanaka, former Prime Minister of Japan convicted on a bribery charge, re-elected from his constituency (19); U.S. notifies withdrawal from UNESCO (28).

1984: Johny Weissmuller (79), five time Olympic swimming champion, dies (Jan. 22); Soviet President Yuri Andropov dies (Feb. 10); Konstantin Chernenko becomes new Soviet Communist Party Chief (13); Mikhail Sholokov, (78), Nobel Prize-winning author of "And Quiet Flows the Don" dies (21); Astronauts on board Space Shuttle Challenger creates history by retrieving disabled satellite Solar Max and repairing it (Apr. 12); Phu Dorjei conquers Mount Everest without oxygen - a rare feat (May 9); Dr. Richard Von Weizsasaedear, former Mayor of West Berlin, elected sixth President of W. Germany (23); Vietnam withdraws about 10,000 of its troops stationed in Kampuchea (15); John Turner sworn in as Canada's Prime Minister (30); Lange's Labour Party sweeps to landslide victory in New Zealand (14); Laurent Fabious appointed New P.M. in France (17); Brian Mulroney wins general election in Canada; Prime Minister P.W. Botha elected President of S. Africa (5); North and South Koreans open borders for the first time since '45 (30); Indira Gandhi assassinated ; Rajiv Gandhi sworn in as P.M. (31); Regan re-elected US President (Nov. 7); Bob Hawke wins general election in Australia (Dec. 1); 2,500 killed in Bhopal gas tragedy; China and Britain sign agreement to transfer Hong Kong to China in 1997 (19).

1985: Hun Sen elected Prime Minister of

Kampuchea (Jan. 14). Brazil elects Tancredo Neves to be its first civilian President in 21 years (15). Soviet President Konstantin Chernenko dies; Mikhail Gorbachev elected General Secretary of the Communist Party (Mar. 11). Gen. Zia-Ul-Haq sworn in as President and Mohammad Khan Junejo as Prime Minister of Pakistan (23). *Amadeus* wins Oscar award for best picture (26). Sudanese president Jaafar Nimeiri overthrown in bloodless coup; Armed forces chief Abdel Rahaman Swareddahab assumes power (April 6). Fifty-three spectators killed in a fire at a football stadium in Bradford, England (May 11).

Alan Garcia elected President of Peru (June 1). Andreas Papandreou re-elected Prime Minister of Greece (2). Zia-Ul-Haq becomes the first President of Pakistan to visit Bangladesh (5). Francesco Cossiga elected President of Italy (24).

Andrei Gromyko elected President of the Soviet Union (July 2). Robert Mugabe voted back to power in Zimbabwe (6). The Rainbow Warrior, flagship of the ecological group Greenpeace, sinks after explosion, in Auckland, New Zealand (10). Emperor Hirohito becomes the oldest of 124 successive Japanese monarchs, crossing the 30,756 days that the 108th Emperor Gomizunnoo lived (13). President Abdou Diouf of Senegal elected chairman of the Organisation of African Unity (19).

Worldwide *Live Aid* concert, raises millions of dollars for famine relief in Africa (27). Lt. Gen. Tito Okello sworn in President of Uganda after Milton Obote was overthrown by rebel soldiers (29). Victor Pas Estenssoro elected President of Bolivia (Aug. 5). Writer Shiva Naipaul dies (13). Ali Khamanei re-elected President of Iran (19). Maj. Gen. Ibrahim Babangida becomes President in Nigeria (27). Wee Kim Wee elected President of Singapore (30).

A US robot submarine locates some 800 km south of Newfoundland, the wreck of the Titanic, which hit an iceberg and sank on April 14, 1912, taking 1,513 lives (Sept. 1). Zimbabwe Prime Minister Robert Mugabe elected chairman of the NAM (8). Olof Palme re-elected Prime Minister of Sweden (16).

Four gunmen, who hijacked the Italian cruise liner Achille Lauro in the Mediterranean surrender to Egyptian authorities at Port Said (Oct. 9). Film maker Orrson Welles dies (11). South Africa hangs black poet Benjamin Moloise, 28, for the murder of a policeman (18). Commonwealth summit opens at Nassau in the Bahamas (21). Jose Biro, inventor of the ball-point pen dies; Ali Hassan Mwinyi succeeds Julius Nyerere as the President of Tanzania; Anital Cavaco Silva sworn in Prime Minister of Portugal (Nov. 6). Garri Kasparov beats fellow Soviet player Anatoly Karpov 13-11 to become the youngest-ever world chess champion (9). Reagan and Gorbachev meet in Geneva–the first super-power summit in six years (19).

The Guinnes Book of Records enters its own name as the biggest selling copyright book (Dec. 6). Vinicio Cerezo elected President Guatemala (9).

1986: U.S. imposes economic sanctions against Libya (Jan. 7). U.S. Solar system probe "Voyager 2' discovers six new moons of the planet Uranus (17); Britain and France decide to build a twin rail tunnel across the Channel (19). Martin Luther King, honoured with a federal holiday on his birthday (20). American Space Shuttle, Challenger explodes after launching; all the seven on board killed; Yoweri Musevini takes over as President of Uganda (29).

Nobel Peace Prize winner, Alva Myrdal (84) dies (Feb. 2). Oscar Arias (45), becomes the youngest Chief Executive of Costa Rica; Mother Teresa's Missionaries of Charity opens its first convent in North America in San Franciso (3). Embattled, President-for-life Jean Claude Duvalier (34), flees Haiti (7). Haider Abubaker Al-Attas, 47, named the new President of South Yemen (8). Dr. Mario Soares, elected first civilian President of Portugal in 60 years; Soviet Union rehabilitates Nobel prize-winning novelist, Boris Pasternak (16). Soviet Union launches Mir (Peace) Space Station (20). In Philippines, Corazon Aquino, 53, sworn in President. Ferdinand Marcos flees into exile. Swedish Prime Minister, Olof Palme, 59, shot dead (25).

Queen Elizabeth II gives formal assent to the Australian Act abolishing all remaining legislative, judicial and executive links of the country with Britain; (Mar. 2). Mikhail Gorbachev re-elected General Secretary of the Soviet Communist Party for five years (6).

Ingvar Carlson, elected Prime Minister of Sweden (12). The Soviet Spacecraft Soyuz T-15 with two cosmonauts on board docks with the orbiting Space Station 'Mir' (14). Swiss voters in a national referendum, overwhelmingly reject their country's entry into the UN (16), US Sixth Fleet knocks out Libyan missile launch bases and sinks two of their gun boats (24).

U.S. bombs Tripoli, the capital of Libya (Apr. 15). Botha Government abandons enforcement of the two-decade-old pass laws (23). Nuclear leak in Chernobyl Power Station spreads atomic radiation over Europe (29).

Ann Bancroft, 30, of the US becomes the first woman to reach N. Pole (May 2). Gro Harlem Brundtland becomes Norway's first woman Prime-Minister (4). Britain's House of Commons passes a package deal providing for a new 'British National Overseas' status for Hong Kong's 2.5 million (14). South Africa raid ANC bases in the frontline states of Zambia, Zimbabwe and Botswana (18); Benazir Bhutto elected co-chairman of Pakistan People's Party (19).

The death toll of Chernobyl nuclear disaster rises to 25 (June 4). Kurt Waldheim elected President of Austria, amidst controversy that he was an "unrepentant Nazi", Israel recalls envoy in Vienna (9). South Africa declares emergency just before the 10th anniversary of the 1976 Soweto uprising. The Commonwealth Eminent Persons Group concludes that a negotiated settlement in S. Africa is impossible (12). Poland, rejoins International Monetary Fund as its 151st member (13). Nigerian Oil Minister, Rilwanu Lukman, elected Chairman of OPEC (26). Argentina wins the 13th World Cup soccer championship defeating West Germany (3-2) at Mexico City (29).

U.S. President authorises the sale of subsidised wheat to the Soviet Union (Aug. 3); Dr. Mahathir Mohammed returns to power in Malaysia (4); South Africa clamps counter sanctions on Frontline states (6). Dr. Joaquin Balaguer sworn in as the 64th President of the Dominican Republic (10). The US snaps defence ties with New Zealand (12). Volcanic gas leak kills 1200 in the north-west of Cameroon (25).

Eighth Summit of Non-Aligned Movement begins in Harare, Zimbabwe. Dr. Robert Mugabe takes over the Chairmanship (Sept. 1). Archbishop Desmond Tutu enthroned as leader of the 2-million-strong Anglican Church in Southern Africa (8). 10th Asiad opens in Seoul (20); Nigerian currency Naira devalued by 66% (26).

Reagan and Gorbachev meet in Reykjavik, capital of Iceland for their second summit (Oct. 11). 1800 die in El Salvador quake; Javier Perez de Cuellar re-elected Secretary General of the United Nations (12). SDI blocks superpower deal at Reykjavik (13); Survivor of Nazi camp Elie Wiesel wins Nobel Peace Prize (14). The Soviet Union starts pulling out its troops from Afghanistan; Taiwan's ruling Kuomintong (KMT) announces the end of 37 years of martial law; Martina registers her 1000th win in international tennis when she defeated Natalie Tanzlat of France (15). Lt. Gen. H. M. Ershad, 56, voted 10th President of Bangladesh (16). Ahmed Zaki Yamani relieved from the post of Saudi Oil Minister (30); Prince Souphanouvong steps down as President of Laos (31).

Joaquin Chissano elected President of Mozambique, to succeed Samora Machel (Nov. 3); President Ershad ends Bangladesh's 5 years of military rule (10); SAARC Summit at Bangalore decides to set up permanent secretariat at Kathmandu; India elected new Chairman (17); The Soviet Parliament adopts legislation that allows private enterprise on a small scale (19); President Reagan reveals that profits made from a shipment of arms to Iran had been illegally siphoned off to finance the guerilla war of the "Contras' in Nicaragua and fires National Security Adviser John Poindexter (25); Saudi–Bahrain causeway opened (26).

U.S. Congress decides to conduct Watergate style probe into the Iran arms deal (Dec. 5); An experimental aircraft, Voyager, takes off from Edwards Air Force Base, California on an unprecedented attempt to circle the earth without stopping or refuelling. The opposition National Alliance for Reconstruction wins a landslide election victory in Trinidad and Tobago ending 30-year rule by People's National Movement (15); Top leaders quit in Vietnam to pave way for youngsters (17).

THE YEAR OF GLASNOST

1987: Campus demonstrations in China for greater democracy (Jan. 1). The Chinese Communist Party General Secretary, Hu Yaobang, 72, resigns. Prime Minister Zhao Ziyang succeeds; King Birendra opens the secretariat of the SAARC at Kathmandu; Abdul Ahsan of Bangladesh takes over as the first Secretary-General of SAARC (16); New Austrian Government, headed by Socialist Party leader Franz Vranitzky sworn in (21); Africa Fund is launched in New Delhi with an opening fund of $70 m. (25); Fresh mandate for Dr. Helmut Kohl in West German elections (26); Three American Professors and Prof. Mithileshwar Singh, an Indian born US resident, are kidnapped by terrorists in Beirut (31).

Thriller-writer Alistair Maclean, 64, dies; Hollywood celebrates its 100th birth-day (Feb. 2). Pakistan President Gen. Zia visits India (21).

Bettino Craxi govt in Italy resigns (Mar. 3); President Reagan admits that Iran arms deal was a mistake (5).

Swedish State Radio reports that the arms firm Bofors won Sweden's biggest export order from India by bribing Indian politicians and officials (Apr. 17); Sri Lankan planes bomb Jaffna causing more than 200 casualties (22); Austrian President Kurt Waldheim denied entry to US because of evidence that he persecuted people during the Second World War (28).

In South Africa President P. W. Botha's National Party retains power in the polls (May 7); Gary Hart, Democratic candidate for US presidency, withdraws from race following a sex scandal (9); Fiji government ousted in bloodless coup; Army Col. Sitiveni Rabuka, 38, seizes power (14); Col. Rabuka sworn in as President of Fiji (15); Hollywood's "love goddess", Rita Hayworth, 68, dies (16); Swedish economist Gunnar Myrdal, 88, dies (18); Soviet Defence Minister Sokolov loses position following a West-German landing a light plane in Kremlin (30).

Lebanese Prime Minister Rashid Karami killed (June 1); In Britain, Margaret Thatcher wins hands down a history-making third term (12); Pham Hung, 74, replaces Pham Van Dong as Vietnam's Prime Minister (18).

President Chun Doo-Hwan of South Korea agrees to opposition demands for direct presidential elections and sweeping democratic reforms (July 1); UN Security Council unanimously passes a resolution demanding an end to the seven-year-old Iran-Iraq war (21); India and Sri Lanka sign peace accord in a bid to end the 5-year old ethnic trouble (29).

200 Iranians die in Mecca when they clash with Saudi police (Aug. 1); Zimbabwe assembly passes constitution amendment bill abolishing seats reserved for whites in the Parliament (21).

In Sri Lanka LTTE takes over civil administration in Tamil areas (Sep. 1); Soviet Union and United States reach agreement on a treaty on intermediate-range nuclear missiles (18); Col. Sitiveni Rabuka, Fijian Military Strongman, stages a second coup and assumes power (25); LTTE leader Thileepan dies in Sri Lanka after a 12-day fast (26); Col. Rabuka declares Fiji a Republic and announces a military council headed by him to govern the country (29).

Sweden bans trade with South Africa (Oct. 1); In Lhasa, capital of Tibet, 6 persons die as police open fire on demonstrators against Chinese occupation of Tibet (3); In Sri Lanka 12 LTTE men, including two top leaders detained by government, commit suicide by swallowing cyanide pills (5); The Commonwealth ousts Fiji from membership (17); Stock-prices crash in United States and investors lose an estimated 500 billion dollars (20).

Third SAARC Summit opens in Kathmandu; King Birendra of Nepal is elected Chairman of SAARC; In China Zhao Ziyang is named head of the Communist Party, Deng Xiaoping to continue as Chairman of Central Military Commission (Nov. 2); US dollar tumbles to record low following share market collapse (3); Tunisian President Habib Bourgiba is deposed and Prime Minister Zine El Abidine Ben Ali takes over as President, (7); Sri Lankan Parliament adopts bills for provincial councils (12); In China Vice Premier Li Peng is nominated Prime Minister (18).

James Baldwin, 63, American black novelist dies in France; Dr. Najibullah elected President of Afghanistan under a new constitution (Dec. 1); Cosmonaut Yuri Romanenko, 43, Commander of the Orbiting Platform *Mir* breaks the 300-day space endurance record, also held by a Soviet (3); Prince Norodom Sihanouk and the Vietnamese-backed Prime Minister Hun Sen sign a four-point agreement aimed at accelerating efforts to end Kampuchea's civil war (4); Former Governor-General, Ratu Sir Penaia Ganilau appointed first President of the new Fiji Republic;Ratu Sir Kamisese Mara becomes P.M; Barak Sope, 36, nominated Prime Minister-designate of the South Pacific nation Vanautu (5); Reagan and Gorbachev sign historic treaty in Washington to scrap intermediate nuclear weapons (8); Garry Kasparov retains world chess championship beating Anatoly Karpov in Seville, Spain (20); About 2000 people die in ship-tanker smash off Manila, Philippines (21); Tamil Nadu Chief Minister M. G. Ramachandran dies (24).

1988: Chinese Nationalist President, Ching-Chiang-Kuo, dies of heart attack (Jan. 13).

JVP men gun down Sri Lankan Opposition (SLMP) leader, Vijaya Kumaranatunga (16); U.S. closes PLO's UN Observer mission in New York (17).

George Bush, US Vice-President, emerges on top in primaries (Mar. 9); Vietnamese Prime Minister Pham Hung, dies. Suharto once again sworn in as President of Indonesia (11); Seventy football fans killed in a stampede in a Kathmandu stadium (12).

WHO observes 'April 7' as 'No Tobacco (smoking) Day' in connection with its 40th anniversary (Apr. 7); Gen. Yang Shangkun elected President of China (8); Peng becomes China's new Prime Minister (9); "The Last Emperor", directed by Bemardo Bertolucci, wins nine Oscars, including best picture and best director (12); Geneva accord for Afghan peace signed (14), Syria and PLO agree to normalise relations after a five-year-long break (22).

French President Francois Mitterand elected President a second term (May 9); Soviet troops begin withdrawal from Afghanistan (15); Pakistan President, Gen. Zia-ul-Haq, dissolves National Assembly, removes Prime Minister and disbands his cabinet; Soviet leader, Mikhail Gorbachev and US President, Ronald Reagan, open five-day Kremlin Summit (29).

Hussein Musavi re-elected Prime Minister of Iran (June 30).

U.S. Navy's combat ship, 'Vincennes', shoots down an Iranian Airbus by mistake over the Persian gulf, killing all the 290 passengers (July 3). More than 160 people killed in a fire which engulfed oil rig, Piper Alpha, the worst disaster in the history of North Sea oil industry (7); Iran accepts UN ceasefire resolution 598; Nelson Mandela, African National Congress leader, celebrates his 70th birthday in Cape Town's Pollsmoor prison (16); Governor of Massachusetts, Michael Dukakis, wins Democratic Party's nomination for American Presidential race (21); UN gives its 1988 Africa Prize for leadership to Robert Mugabe, President of Zimbabwe (22); Gen. Ne Win, head of the ruling Burma Socialist Programme party, resigns (23); Sein Lwin elected ranked leader of Burma's governing Socialist Party and also made President of Burma (26); UN-mediated talks to end Iran-Iraq conflict begins in New York (27); Former Maj. Gen. Chatichai Choonhavan sworn in as the first elected Prime Minister of Thailand since 1976 (31).

UN Secretary General Javier Perez de Cueller gets 1987 Jawaharlal Nehru Award for International Understanding (Aug. 2); Sein Lwin resigns as President of Burma (12); Paraguayan President, Gen. Alfredo Stroessner, starts his 8th presidential term (15); Pakistan President, Gen. Zia-ul-Haq (64) killed in an air crash; Emergency declared in Pakistan; Senate Chairman, Ghulam Ishaq Khan, takes over as President; Bill Hayden, Australia's Foreign Affairs Minister, to be the new Governor General of Australia (17); Attorney General, Maung Maung, named President of Burma and Chairman of the ruling Burma Socialist Programme Party (19); Iran & Iraq implement a UN-brokered ceasefire (20); Iran & Iraq begin direct talks in Geneva under the auspices of UN Secretary-General (25); 1500 prisoners killed when fire ravaged a huge prison near Rangoon (27); China and Soviet Union open their first direct talks in Beijing, to find a political solution to Kampuchean conflict (28); South African troops complete pull out from Angola (30).

Lee Kuan Yew becomes Singapore's Prime Minister for the seventh successive term (Sept. 10); Steffi Graf, 19, of West Germany, completes 'Grand Slam; by winning women's singles final of U.S. Open (11); 24th Olympic Games opens at Seoul, South Korea, with a record participation of 160 countries (17); Gen. Saw Maung takes over as Burmese Prime Minister (21); Gen. Michel Aoun, Commander-in-Chief of Lebanese armed forces, named Prime Minister (23); Ben Johnson of Canada becomes the fastest human in the world by beating American Carl Lewis and others to win men's 100 m dash in Seoul Olympics, clocking 9.79 seconds (24); Turkish Prime Minister, Trugut Ozal, vows to continue in office despite defeat in referendum; Episcopal Diocese of Massachusetts, U.S., elects Rev. Barbara C. Harris as the first female bishop in the world (25); Sri Lankan Cabinet Minister, Lionel Jayetileke shot dead; Maldivian President, Maumoom Abdul Gayoom, wins third five-year term in office (26); Ben Johnson stripped off his 100 m gold medal for taking drugs, the medal awarded to Carl Lewis (US) who clocked 9.92 secs to finish second in that historic race; Rakowski appointed new Polish Prime Minister (27); 1988 Nobel Peace Prize for U.N. Peace-Keeping Forces (29); Soviet President Andrei Gromyko and four other top figures dropped from Kremlin leadership (30).

Mikhail Gorbachev emerges as the most powerful leader in Soviet Union, combining the offices of General Secretary of the Communist Party and President of the country. West German Steffi Graf achieves historic "Golden Slam", by winning gold medal in the Olympic women's tennis championship (Oct. 1); Curtain comes down on Seoul Olympiad—Soviet Union sweeps the overall championship with a total of 132 medals (55-31-46), East Germany comes second with 102 medals (37-35-30) and USA third—with 94 medals (36-31-27) (2); Angola, Cuba, South Africa and U.S. agree that Cuba should withdraw its troops from Angola in 24 to 30 months (10); Egyptian writer, Naguib Mahfouz wins 1988 Nobel Prize for literature (the first Arabic language writer to win it); Lasdilav Adamec sworn in as Prime Minister of Czechoslovakia replacing Lubomir Strougal (13).

A group of at least 150 sea-borne invaders storm Maldivian Capital, Male, in an attempt to overthrow the Government of President Maumoon Abdul Gayoom. Indian 'troops quell the invasion (Nov. 3); Col. Kasdi Merbah appointed Prime Minister of Algeria (5); Salman Rushdie's novel, "The Satanic Verses", banned in India and many other nations, awarded the 1988 Whitbred Prize for fiction (8); George Bush, Vice President for eight years elected President of the U.S. (9); Richard Hadlee (37) of New Zealand becomes the highest wicket-taker in Test Cricket when he claimed his 374th victim in Bangalore Test (12); Independent Palestine state declared by PLO Chairman, Yasser Arafat (15); Canadian Prime Minister, Brian Mulroney, re-elected (22).

Emergency lifted, Ms. Benazir Bhutto nominated Prime Minister of Pakistan by President, Ghulam Ishaq Khan. She at 35, is the youngest ever Prime Minister in two centuries and the fifth woman Prime Minister (Dec. 1); Carlos Andres Perez wins Venezuela's Presidential elections (4); South Korean Prime Minister, Lee Hyun Jae, replaced by Kang Young Hoon (6); A devastating earthquake in northern Armenia, Soviet Union, claims thousands of lives (8); World celebrates completion of 40 years of unanimous adoption of the Universal Declaration of Human Rights (10); Prime Minister, Ms. Benazir Bhutto, wins confidence vote in Pakistan National Assembly; Acting President, Ghulam Ishaq Khan, elected President of Pakistan; North Korean Premier, Li Gun-Mo resigns, Young Hyong-Muk appointed new Premier (12); Agreement envisaging independence of Namibia and peace in Angola signed in Brazzaville, Congo, by Angola, Cuba and South Africa (13); PLO Chairman, Yasser Arafat, addresses the special session of U.N. General Assembly, convened in Geneva in his honour (14); U.S. lifts a 13-year-old ban on direct contact with PLO and decides to enter into a 'substantive dialogue' with it (15); Prime Minister, Ranasinghe Premadasa, elected President of Sri Lanka (20); Pan Am Boeing 747 crashes into a Scottish town, killing 268 (22); Algerian President, Chadli Benjedid re-elected for a third term (23); SAARC Summit begins in Islamabad. Benazir elected chairperson. Five new areas of regional co-operation identified (29).

CHANGES IN EAST EUROPE

1989: R. Premadasa sworn in President of Sri Lanka (Jan. 2); U.S. Navy fighter jets shoot down two Libyan planes; Japanese Emperor Hirohito dies at 87. Crown Prince Akihito proclaimed new Emperor (7); West Indies wins World Series Cup one-day cricket competition (18); Ante Markovic named Prime Minister of Yugoslavia (19); George Bush takes oath as the 41st President of U.S. (20); Over 1400 killed in a strong earthquake in Soviet Tadzhikistan; Spanish painter Salvador Dali dies (23); Ted Bundy, suspected killer of as many as 100 women across US, executed in Florida (24); West Germany's Steffi Graf wins Australian Open Women's Tennis title, her fifth successive Grand Slam (28); Panchen Lama dies in Beijing (29).

Paraguayan President Gen. Alfred Stroessner deposed in a coup; Gen. Andres Rodriguez takes over as new President (Feb. 13); Michael Manley sworn in as Jamaica's Prime Minister (13); Last of Soviet troops pull out from Afghanistan (14); Afghan Prime Minister Mohammed Hasan Sharq resigns (20); World dignitaries attend funeral of Emperor Hirohito of Japan (24); Iranian Parliament passes motion to break diplomatic ties with Britain; Mike Tyson defeats Frank Bruno to retain his World Heavyweight title (26); Israel agrees to return a strip of desert beach to Egypt (27).

Sultan Azlan Shah, Ruler of Perak, elected new Constitutional Monarch of Malaysia (Mar. 2); D.B. Wijetunge appointed Sri Lankan Prime Minister (3); Zambian President Kenneth Kaunda dismisses Prime Minister Kebby Musokotwane and appoints former Army Commander Gen. Malimba Masheke in his place (15); The film "Rain Man" wins four Oscars, including Best Actor Award for Dustin Hoffman (30).

U.N. Peace-Keeping Force arrives in Windhoek signalling the start of the implementation of U.N. Resolution 435 for independence of Namibia (April 1); Yasser Arafat appointed President of the self-declared State of Palestine (2); Tunisian President Zine El Abdine Ben Ali re-elected (4); Japanese Prime Minister Noboru Takeshita admits in Diet (Parliament) that he received over 150 million yen in one form or another from Recruit & Co. in last three years (12); More than 100 people killed in soccer match stampede at Hillsborough stadium in Sheffield (England) (15); Lucille Ball (77), a Hollywood star who became the most widely recognized comedienne on television in 'I Love Lucy,' dies (27).

Mrs. Margaret Thatcher completes 10 years as British Prime Minister (May 3); Tens of thousands of Chinese students in Beijing demonstrate for democratic rights (4); Gonzalo Sanchez de Lozada becomes new Bolivian President; Carlos Menem wins Argentina Presidential election; Soviet President Mikhail Gorbachev concludes his four-day historic visit of China; Martial law imposed in Beijing (19); Mikhail Gorbachev elected Soviet Union's first Executive President (25); Chinese Communist Party General Secretary Zhao Ziyang put under house arrest (29); Japanese Foreign Minister Sousuke Uno nominated new Prime Minister (31).

Founder of Iran's Islamic Republic, Ayatollah Ruhollah Khomeini (86), dies (June 3); In Beijing, soldiers storm Tiananmen Square and crush the month-old students' pro-democracy campaign killing hundreds and injuring many more (4); Iranian President Ali Khamenei named acting "Leader of the Islamic Republic" (5); Nikolai Ryzhkov re-elected as Prime Minister of Soviet Union (7); 17-year old Arantxa Sanchez of Spain defeats World No. 1 Steffi Graf to win French Open Tennis Championships (10); Michael Chang from U.S. beat Swede Stefan Edberg in French Open men's singles final. He becomes the youngest to win a Grand Slam title at 17 years and $3^{1}/_{2}$ months (11); Ceasefire goes into effect in Angola ending a 14-year old civil war between government forces and Unita rebels (23); China replaces Zhao Ziyang with Jiang Zemin as Party General Secretary (24): Sudanese armed forces overthrow Civilian Government of Prime Minister, Sadek el-Mahdi and seize power (30).

Andrei Gromyko (79), who steered Soviet foreign policy for three decades and served as Head of State for four years, dies (July 2); Hungary's long time leader Janos Kadar dies (6): West Germans Steffi Graf and Boris Becker win Women's Singles title and Men's Singles title respectively in Wimbledon championships (9); Laurence Olivier, one of the greatest figures of British stage, dies (11); Amirthalingam, Secretary-General of TULF, gunned down by LTTE militants (13); France celebrates 200th anniversary of the French Revolution (14); Gen. Wojciech Jaruzelski elected President of Poland (20); Mike Tyson knocks down Carl Williams to retain his undisputed Heavyweight title (22); Parliamentary Speaker Ali Akbar Hashemi Rafsanjani elected Iran's President; Gen. Wojciech Jaruzelski replaced by Prime Minister Mieczyslew Rakowski, as Leader of Polish Communist Party (30); Lakshmi Jain, a development economist and champion of India's poor, awarded Ramon Magsaysay Award for Public Service for 1989 (31).

Australian Cricket team regains 'Ashes' for the first time on English soil since 1934; Japanese Prime Minister Sosuke Uno resigns (Aug. 1); New Zealand Prime Minister David Lange steps down (7); Geoffrey Palmer elected Prime Minister of New Zealand (8); Toshiki Kaifu becomes new Japanese Prime Minister (9); P.W. Botha quits, F.W. De Klerk sworn in as acting South African President (19); Tadeusz Mazowiecki is new Polish Prime Minister, ending 45 years of Communist rule (24); Wreckage from an Air-India Boeing 707 that crashed on Mont Blanc on January 25, 1966, discovered (after 23 years) (27).

Ninth Non-aligned Summit opens at Belgrade (Sep. 1); About 700 people killed in a blast in Iraq (6); Steffi Graf beats Martina Navratilova to win U.S. Open Women's Singles title (10); Boris Becker wins his first American championship - U.S. Open, beating top seeded Ivan Lendl (11); F.W. De Klerk elected as South African President; Sam Nujoma, President of SWAPO, returns to Namibia after 30 years in exile (14); Pakistan re-admitted as member of Commonwealth (15); Vietnamese troops pull out of Cambodia (26); Former Philippines President Ferdinand Marcos dies (28).

Dalai Lama (Tenzin Gyatso), Tibetan spiritual leader living in exile in India, wins 1989 Nobel Peace Prize (Oct. 5); Walter Sisulu, senior leader of African National Congress (ANC) and colleague of Nelson Mandela, freed after 25 years in prison (15); East German Communist Party Chief Eric Honecker quits (18); South Asian Federation (SAF) Games opens in Islamabad; Pakistan wins Sharjah Champions Trophy (20); Hungary becomes democratic republic, putting an end to the era of communism (23).

Pakistan beats West Indies to win the MRF World Series for the Nehru Cup Cricket tournament (Nov. 1); Election of black leader, Douglas Wilder as Governor of Virginia State and another black candidate David N. Dinkins as New York City Mayor makes history in US.; Communist-dominated East German Government resigns (7); Chinese leader Deng Xiaoping resigns from the Chairmanship of the Central Military Commission, his last official post, Jiang Zemin replaces him (9); The Berlin Wall, the symbol of the division between East and West, broken open in various places (10); In Bulgaria, Petur Mladenov replaces Todor Zhivkov as Secretary-General of the Communist Party (11); SWAPO gets majority in Namibian elections; Hans Modrow elected East German Prime Minister (14); Czech Communist Party Chief Milos Jakes resigns (24); Nicolae Ceausescu, Romanian Communist Party Chief and Head of State, re-elected; Karel Urbanek appointed Head of the Czechoslovak Communist Party (25).

U.S. President George Bush and Soviet

President Mikhail Gorbachev, begin their first Summit talks in a Soviet luxury liner off Malta (Dec. 2): East Germany appoints its first non-communist Head of State - Manfred Gerlach (6); In Czechoslovakia, first Government without a communist majority in 41 years, headed by Communist Prime Minister Marian Calfa, sworn in (10); Nobel laureate Andrei Sakharov of Soviet Union dies (14); Fernando Collor de Mello becomes the first democratically elected President of Brazil in 29 years (19); US. forces invade Panama in a bid to topple Gen. Noriega, but the General eludes capture. Guillermo Endara is the new President (20); Romanian President Nicolae Ceausescu over-thrown (22); Gen. Noriega, Panama's deposed dictator, seeks refuge in the Vatican Mission in Panama City (25); The ousted Romanian President, Nicolae Ceausescu, and his wife Elena, executed; Ion Iliescu named new President (26); Vaclav Havel elected Czechoslovakia's first non-communist President since 1948 (29).

GERMANY REUNITED

1990: Deposed Panamanian dictator Gen. Noriega in U.S. custody to stand trial; About 225 die in a Pakistan train accident. (Jan. 4); Moscow gives full backing to Romania's new leaders. (7); Martial law lifted in Beijing. (10); Bangladesh boat collapse–200 die. (14); Many killed in ethnic clashes in Azerbaijan, U.S.S.R. (15); USSR announces withdrawal of 80,000 troops from Czechoslovakia. (17); Emergency in Baku, capital of Azerbaijan. (20); John McEnroe disqualified from Australian Open tennis championship. (21); 14th Commonwealth Games open in Auckland; Japan launches rocket to the moon. (24); Swiss authorities freeze Bofors commission accounts. (26); Steffi Graf bags women's singles title in Australian Open. (27); Ivan Lendl wins Australian Open men's singles crown. (28); Ousted East German leader Erich Honecker arrested. (29).

Thirty-year-old ban on the African National Congress (ANC) lifted. (Feb-2); Aucklend Commonwealth Games comes to a close with Australia leading the medals tally, followed by England and Canada. (3); New Zealander Richard Hadlee becomes the first in Test Cricket history to take 400 wickets. (4); Peter Pithart appointed Czech Prime Minister; Soviet Communist Party relinquishes its 72-year-old monopoly over the state. (7);

S. African leader Nelson Mandela freed after 28 years in prison. (11);Sam Nujoma elected Nambia's first president. (16); Japan's ruling Liberal–Democratic Party scores a convincing victory in their general elections. (19); Holland hockey team lifts World Cup. (23); President Daniel Ortega loses in Nicaraguan Presidential Polls. (26); Toshiki Kaiju re-elected Japan's Prime Minister; Soviet Parliament votes for Presidential form of government. (27).

Nelson Mandela elected Deputy President of ANC. (Mar. 2); In Afghanistan, bid to overthrow Najibullah Government fails. (6); Haitian leader Lt. Gen. Prosper Avril quits; Patricio Aylwin sworn in as Chile's first elected President since 1973 cou'p; Australia wins Rothmans Cup. (11); Lithuania proclaims itself independent after a half-century of Soviet rule. (12); Mrs. Ertha Pascal–Trouill becomes the first woman president of Haiti. (14); Mikhail Gorbachev takes oath as the first Soviet Executive President; Fernando Collor De Mello takes office as Brazil's youngest president. (15); East Germans vote for unification of both Germanys. (19); Namibia attains freedom at midnight; The Vatican and Soviet Union to establish full diplomatic relations. (20); Russian Foot-baller Lev Yashin, one of the world's-greatest-ever goal keepers dies. 24. Last batch of Indian peace keeping force leaves Sri Lanka. (21); Palestine President Yasser Arafat receives the Jawaharlal Nehru Award for International Understanding; The film "Driving Miss Daisy" wins 4 Oscars. (27); Sri Lankan Prime Minister D.B. Wijetunge resigns, Cabinet dissolved. (28);

Bob Hawke re-elected Australian Prime Minister. (29); D.B. Wijetunge retained as Sri Lankan Prime Minister. (30).

Zimbabwean President Robert Mugabe re- elected. (Apr. 1); Non-communists win Hungary elections. (9); In Greece, conservative New Democracy Party forms Government, Constantive Mit Sotakis is new Prime Minister; Mother Teresa resigns as Head of the Missionaries of Charity. (11); Lothar de Maiziere becomes new East German Prime Minister. (13); In Nepal, King Birendra Sacks Prime Minister Marichman Singh and dissolves National Panchayat, K.P. Bhattarai to be new Prime Minister; Film actress Greta Garbo dies; Miss Norway, Mona Grudt, chosen Miss Universe, 1990. (16); Abortive coup in Nigeria. (22); Namibia admitted to the UN as its 160th member. (23); Violeta Chamorro sworn in President of Nicaragua. (27).

Swedish Government agrees to make available to India Audit Bureau Report on the alleged bribes paid to Indian Government's arms buyers. (May 4);Pakistan P.M. Benazir Bhutto appeals to all Muslim nations to support the secessionists in Kashmir. (9); Nepal P.M. Krishna Prasad Bhattarai states that Nepal will soon become a secular state. (10); Presidents of three Baltic Republics meet and decide to forge a joint front against Moscow in their drive to re-establish their independence. (11); King Birendra of Nepal dissolves the controversial constitution recommendation commission set up by him. (14); North & South Yemen merge to become Republic of Yemen. (22); U.S. blacklists India under super 301 trade law; Fiji orders the Indian Embassy to close down; Nepal disbands panchayat. (23); Palestine Liberation Organisation Chairman Yasser Arafat calls for sanction against Israel. (26); Emergency Arab Summit at Baghdad calls for Arab unity. (28); Boris Yeltsin elected president of Russian Federation. (29).

At the end of a three-day summit, US President Bush and USSR President Gorbachev agree on ending cold war. (June 2); Soviet Parliament passes a key law giving private business the same legal status as state enterprise. (6); US Government decides not to take punitive action against India under the super 301 provision of the US Trade Act. (14); At least 40,000 people die in a major earth quake in Iran. (21); Soviet Union proposes withdrawl of victorius world war II Allies troops from Berlin six months after German unification. (22).

West and East Germany abolish their common border. West German currency became East German Currency also; In a stampede in the tunnel near Mecca nearly 1500 pilgrims die. (July 1); The ruling Nepali Congress decides to retain the Hindu character of Nepal while allowing freedom for all religions. (5); Gorbachev re-elected general secretary at Soviet Communist Party Congress. (10); Fiji drops controversial move to impose a grower/miller contract that would have substantially reduced the income of sugar-cane farmers. The military Junta in Myanmar (Burma) makes it clear that it has no intention to transfer power to the political parties that won a landslide victory a week ago in elections. (13); More than 500 killed in the Philippines earthquake. (16); Indian Prime Minister V.P. Singh arrives in Moscow for a visit. Fiji adopts racist constitution barring Indians from power. (24); Maldivian President Abdul Gayoom gives amnesty to former President Ibrahim Nazir, who is in exile in Singapore since 1978. Soviet Bylorussia declares independence.(26).

Soviet Union grants freedom of the press and journalists' rights and abandon censorship, allowing anybody who wants to publish a newspaper. (Aug. 1); In an overnight attack, Iraq captures Kuwait. Kuwait Emir flees to Saudi Arabia. (2); India calls upon Iraq to withdraw its troops from Kuwait. (3); Iraq begins pull out of its troops from Kuwait after installing a Government of Iraq's choice. (5); Pakistan President Ghulam Ishaq Khan dismisses 20-month-old Benazir Bhutto Government and appoints combined opposition candidate Ghulam Mustafa Jatoi as caretaker Prime Minister and announces fresh election on October 24. (6); United States responding to Saudi Arabian request decides to help that country from a possible Iraqi attack; U.S. send warships, warplanes and troops. (7); The new Pakistan Government imposes restrictions on former Prime Minister Benazir Bhutto and her relatives on travel abroad. (8); Iraq announces annexation of Kuwait to Iraq and orders foreign countries to shift their embassies to the capital of Iraq – Bagdad. Security Council declares merger null and void. (9); Arab League meeting in Cairo decides to send Pan-Arab force to Saudi Arabia to thwart possible Iraqi aggression. (11); Iraq unilaterally decides to withdraw troops from Iranian areas as also to release Iranian Prisoners of War. (15); Iraq and Iran exchange Prisoners of War. Iraq also began withdrawal of troops from the territory captured from Iran during the 8-year war. (17); United Nations Security Council authorises members to use force in enforcing UN embargo for invading Kuwait. (25); Iraq makes Kuwait its 19th province. (28).

US President George Bush and USSR President Mikhail Gorbechev meet at Helsinki to find a solution to the Gulf problem and decide to consider additional measures within the United Nations framework if current sanctions against Iraq fail to end the crisis. (Sep. 9); West and East Germany and second World War allies sign treaty at Moscow to restore sovereignty to a United Germany. (12); The International Olympic Committee announces in Tokyo that the 100th Olympics in 1996 will be held at Atlanta, USA. Atlanta was selected in preference to Athens, Belgrade, Manchester, Melbourne and Toronto. (18); Olympic Council of Asia suspends Iraq from taking part in the Asian games. Twenty seven members voted for the expulsion, three against and five abstained from voting at the council's meeting at Beijing. (20); Eleventh Asiad opens in China's Capital, Beijing. Thirty seven countries participate. (22); Soviet Parliament votes for free market economy. (24); Japan and North Korean official-level meeting held in Pyongyang, North Korea for normalisation of results frozen for a long time; Algeria's first president, Mr. Ahmed Ben Bella overthrown in a coup in 1965 and was in Barcelona, Spain, returned to Algeria; At the meeting held at Beijing Olympic Council of Asia voted for Bangkok (Thailand) as the venue for the 1998 Asian Games. The 1994 Games will be held at Hiroshima, Japan. (27); The first-ever summit for children under the auspices of U.N. in New York attended by representatives of over 70 nations issued a declaration and a plan of action to give children better health and better future. (30).

Soviet Union and South Korea establish diplomatic relations. (Oct. 1); Federal Republic of Germany (FRG) (West Germany) and German Democratic Republic (East Germany) unite to become a single country under the name of FRG. (3); Asian Games conclude in Beijing. (7); Rebel Christian General Michel Aown fled from his refuge in the French Embassy in Beirut after calling on his troops to surrender to Lebanese and Syrian Army. (13); Soviet President Mikhail Gorbachev is selected for Nobel peace prize. (16); Malaysian Prime Minister Dr. Mahatir Mohammed wins a two third majority in general elections. (22); In the polls held on 24th in Pakistan Islami Jamhoori Ittehad wins 105 out of the total 217 seats and Peoples' Democratic Alliance led by Mrs. Benazir Bhutto wins 45 seats. (26).

Iraq says United States mobilising more troops is a sign of imminent war. (Nov. 1); British P.M. Margaret Thatcher faces crisis as Dy. P.M. Geoffrey Howe resigns ever differences with the P.M. on her approach to European Economic and Monetary Union; India elected to Security Council for a two-year term. (2); Mr. Nawas Sharif, sworn in as Pakistan's 11th Prime Minister. (6); Democrats retain control of the U.S. Congress over President George Bush's Republican party in the elections. (7); King Birendra of Nepal promulgates new constitution replacing already deferred *partyless panchayat system.* President Bush of U.S. sends 2 lakhs more troops to Gulf, even as his Secretary of State Mr. James Baker fails to win Soviet support for military action against Iraq. (9); Thai International Airways plane highjacked by two Burmese students to focus attention of world community towards the plight of Burmese people under military rule, lands in Calcutta. (10); Emperor Akihito ascended to the world's oldest hereditary monarchy – in Japan. (12); Soviet President Gorbachev wins approval to re-organise administrative setup which include abolition of Prime Minister's post and induction of a Vice President in place of Prime Minister. (17); NATO and Warsaw pact member countries sign treaty to cut military wares in Europe, thus, ending formally the 'cold war'. (19); Fifth SAARC meeting began in Male. Maldives President Abdul Ghayoon elected chairman; Mrs. Margaret Thatcher, British Prime Minister, loses to Defence Secretary Michael Heseltine in the conservative party leadership contest in the first round. There is a second round option. (21); British

P.M. Margaret Thatcher announces decision to step down as also her intention not to run for the second round in the leadership election. (22); In the leadership election in Britain John Major got 185 (2 short of absolute majority), Michael Heseltine – 136, and Douglas Hurd – 56; John Major, Chancellor of the Exchequer in Thatcher cabinet takes charge as Prime Minister of Britain; Emergency clamped in Bangladesh. (28); UN Security Council gives ultimatum to Iraq to withdraw from Kuwait before January 15, 1991 (12 votes in favour 2 against (Cuba and Yemen) and one (China) abstained) Iraq rejects the ultimatum as illegal and invalid. (29); United States offers talks with Iraq, Iraq accepts. (30).

Britain is united with the rest of Europe 130 feet under the seabed of the English Channel when the gap between British and French bores of the Channel tunnel project was opened. (Dec. 1); In the first poll for a democratic united German Parliament on December 2, Chancellor Helmut Kohl with coalition partners get an overwhelming majority. (3); Following President Ershad's announcment that he will step down, Bangladesh witnesses unprecedented mass jubilation. The opposition nominates Chief Justice Mr. Shahabuddin Ahmed as the combined opposition candidate for the post of interim (Vice) President. (5); Bangladesh President Gen. H.M. Ershad resigns. Opposition consensus candidate Chief Justice Shahabuddin Ahmed sworn in as interim Vice President.; Iraq announces decision to release all foreign hostages immediately. (6); Mr. Lech Walesa elected President of Poland with an overwhelming majority (77 percent) (10); Former Bangladesh President Mr. Ershad and his wife kept under detention in Dhaka. (12); African National Congress President Mr. Oliver, Tambo returns to South Africa after 30 years' exile in Zambia. (13); Soviet Foreign Minister Mr. Edward Shevardnadze resigns following differences with President Gorbachev; United Nations Security Council votes unanimously to deplore Israel's decision to resume deportation of Palestinian civilians in the territories it has occupied for 23 years. (20); Armed Forces overthrow Surinam President Ramsewak Shankar; Congress of the People's Deputies of the USSR reject a motion to change the name of the country into 'Union of Soviet Sovereign Republics'; Soviet Parliament approves President Gorbachev's proposal for nation-wide referendums on the country's future and on private land ownership. (24); Gulf Co-operation Council in their meeting at Doha, Qatar recommends creation of comprehensive joint security set up to safeguard interests. (25); Garry Kasprov of Soviet Union retains his title of World Chess Champion defeating fellow Soviet Anatoly Karpov. (27); LTTE declares unilateral cease-fire effective midnight 31st December. (30).

LANGUAGES

No one has yet taken a satisfactory count of the world's languages. There are many estimates. They vary by thousands. The main cause of confusion is how to distinguish a language from a dialect.

Linguists have not agreed as to what distinguishes a language from a dialect. In view of this, differing estimates are quite possible and admissible. We have here adopted the estimate of some French and American linguists who have listed a total of 2796 languages.

Of the 2796 languages mentioned, over 1200 are spoken by American-Indian tribes, most of which do not number more than a thousand people. African-Negro groups speak some 700 different languages while the natives of Australia, New Guinea and other Pacific islands account for as many as 500 languages of their own. Add to this an estimated 200 minor languages of Asia of unknown origin and we find that the total number of the world's major languages (spoken by a million or more people) hardly exceeds 160; in other words, the overwhelming majority of the world's languages, say 85 per cent, are spoken by numerically small groups, while some 15 per cent represent major languages.

The world's languages considered as families fall into 10 broad groups. 1. Indo-European, 2. Semito-Hamitic, 3. Sino-Tibetan, 4. Dravidian, 5. Ural-Altaic, 6. Malayo-Polynesian, 7. African-Negro, 8. American-Indian, 9. Caucasian, 10. Miscellaneous.

1. Indo-European Family†: The Indo-European languages may be subdivided into four major divisions. (a) *Germanic* includes

English, German, Dutch, Swedish, Danish, Norwegian and Icelandic. (b) *Romance* includes French, Spanish, Portuguese, Italian and Romanian. (c) *Balto-Slavic* includes Russian, Polish, Ukrainian, Czech, Slovak, Serbo-Croatian and Bulgarian. (d) *Indo-Iranian* group may be conveniently divided into *Iranian* and *Indic* or Indo-Aryan branches. *Sanskrit* or the Indic branch is the original Indo-Iranian language that was brought into India by the Aryan immigrants. It is the earliest of the Indo-European languages to appear in recorded form.

2. Semito-Hamitic Family comprises Arabic, Hebrew, Libyan, Berber, Galla, Amharic (Ethiopia) and Somali languages.

3. Sino-Tibetan Family is dominated by Chinese, which with its many dialects commands 700 million speakers out of a total of about 760 million for the whole family. Tibetan, Burmese, Thai and Korean languages form the rest of the family.

4. Dravidian Family includes the major languages of South India, Tamil, Telugu, Kannada and Malayalam.

5. Ural-Altaic Family includes Finnish, Hungarian, Turkish, Mongol and Manchu.

6. Malayo-Polynesian Family comprises Maori (native to New Zealand), Malagasy (Madagascar), Malay and Indonesian.

7. African-Negro group covers the major African languages, Sudanese, Guinean, Bantu, Hausa (Nigeria), Swahili and others.

8. American-Indian Family comprises many languages of the Red Indian tribes and includes the languages of the Eskimos and Aleuts.

9. Caucasian Family consists of a number of small languages like Georgian and Circuosian.

10. Miscellaneous. Among the lesser families, the *Austric family* apparently commanded a wide circulation in very ancient times. It is at present represented by tribal tongues like the *Munda* group in India. The aboriginal languages of Australia, Tasmania and New Guinea apparently belong to this group.

Basque, which is spoken on both sides of the Pyrenees in Europe, appears to be a remnant of a language family called Mediterranean, which has long since disappeared. The present speakers of Basque number nearly a million.

Basque is a very difficult language. The story goes that the devil tried to learn Basque, so as to tempt and ruin the Basques but gave up the attempt in despair. Basque has no affinity to any European language but bears close resemblance to many American-Indian tongues. Some linguists believe that Basque was the language of the lost continent, Atlantis.

The *Ainu*, the language of the white-skinned people of Hokkaido, the northernmost of Japanese islands, the *Hyperborean* tongues of Siberia and Kamchatka and many other minor groups, too numerous to mention

Fatal Fungi!

There is a glaring error in the 1990 edition of the Larousse, *France's most distinguished dictionary. Under the heading champignon, or mushroom, three poisonous fungi are listed as "harmless".*

One of the mushrooms so identified, the Amanita phalloides, *is so dangerous, in fact, that Peterson's Guide to Mushrooms, an American publication, calls it the "death cap," because "one bite kills".*

Larousse *was alerted to the error by readers' letters and immediately withdrew 180,000 copies of the dictionary from sale. The publishing company has hired 250 students to paste stickers in the books correcting the mistake—at a cost of almost $2 million.*

Some people who had already bought the Larousse *plan to hang on to their copies as collector's items, despite the potential danger of the information inside.*

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† The term Indo-Hittite is now preferred to Indo-European. This will include Anatolian language and Indo-European proper.

make up the rest of the world's languages.

Of the great modern languages, 13 are spoken by 50 million or more people. They are Chinese, English, Hindustani, Russian, Spanish, German, Japanese, Arabic, Bengali, Portuguese, Malay (Indonesian), French and Italian. Approximate estimates of speakers of different languages made by various authorities differ greatly, sometimes by millions. This is so because the speakers of different languages are spread over the whole globe and no statistics beyond so-called guestimates are available about them.

Chinese, the first language in point of the number of speakers (1021 m.) is mainly confined to China and Manchuria. *Japanese* is first and foremost the native tongue of the people in Japanese islands, but enjoys some currency in Korea and the nearby area of Asiatic mainland. *Malay* is spoken in Indonesia and Malaysia and is understood as far as the Philippines.

Arabic covers an incredibly huge area from Africa right across Asia and is learned wherever Islam predominates, though it is almost everywhere mingled with other languages of non-Arabic stock like Berber, Cushite and Hebrew.

English covers nearly one-fifth of the Earth's surface. It is spoken by 431 million people in the world including North America, Europe, Asia, Africa and Oceania comprising Australia and New Zealand.

Russian dominates one-sixth of the total area of the Earth, being the national language throughout the Soviet Union. But Russian is used as a native tongue only by half the population of Soviet Russia. The rest speak some 145 different languages.

Spanish appears in its homeland Spain and the ex-Spanish colonies. But these account for only a quarter of the Spanish-speaking population. The rest (three-fourths) are in the western hemisphere, covering Mexico,

Another bastion Falls to Ms

The 205-year old 'Times of London' has finally succumbed to Ms. From now on, the title will be automatic in its news columns for American women, and on special request for the rest.

Other old favourites are going too, including 'Times' spellings of 'Monna Lisa' and 'Gorbachov.' Monna Lisa becomes 'Mona Lisa' and 'Gorbachov' becomes 'Gorbachev.'

"We came to look very odd," says literary editor, Mr. Philip Howard, a co-author of the paper's new style guide.

'Times' editor, Mr. Simon Jenkins introduced readers to the changes being effected.

The 'Times' style guide, introduced at the turn of the century, was last revised completely in the mid-1960s. There were regular updates but the guide remained, said Mr. Howard, "very mangificent with high standards but terribly restrictive and quite Victorian."

"When Ms is used in the 'Times we get angry letters from those who want to know what that vulgar new word is," said Mr. Howard.

Nolij anyone?

Franklin Electronic Publishers of the U.S. specializes in computerized reference works: dictionaries, spelling aids, thesauruses and combinations thereof. The Company's latest invention is the Speaking Wordmaster, a combination electronic thesaurus, phonetic spelling corrector and game player.

The Wordmaster pronounces more than 80,000 words from its dictionary and thesaurus. The unit also provides nearly half a million synonyms; type in the word "speaking" and the Wordmaster will say "talking", "uttering," "voicing," as well as display those words on its screen. Type in the letters "nolij" and it will correct the phonetic spelling: knowledge. The Wordmaster costs $ 150 (about Rs. 3750).

Central America, Cuba, Puerto Rico, the Dominican Republic and all South American countries barring Brazil and the Guyanas.

Portuguese is spoken in Portugal and the ex-Portuguese colonies. But the greatest number of Portuguese speakers is concentrated in Brazil.

German is practically confined to Europe where it is spoken in Germany, Austria and most of Switzerland. But it enjoys wide currency as a scholastic language all over Europe, especially in Czechoslovakia, Poland, the Netherlands, Hungary, Yugoslavia, Sweden and Norway.

French is the language of France, part of Switzerland, Belgium, ex-French possessions or Departments overseas and Canada (especially the province of Quebec). It is reputed as a language of culture in Europe, and is spoken by a few million non-French men, in addition to their mother tongues.

Italian, the language of Italy, is current in the former Italian colonies, Eritrea, Somaliland, Libya and Cyrenaica and is used by Italian emigrant groups living in various Mediterranean countries, and USA, Argentina, Brazil, Uruguay and Chile.

Major Languages

Language	No. of speakers (in million) Mid-1988	Principal Areas
Chinese†	1021	China
English	431	UK, USA, Canada Ireland, Australia, New Zealand
Hindi	325	North India
Spanish	320	Spain Latin America
Russia	289	USSR
Arabic	187	Middle East
Bengali	178	India, Bangladesh
Portuguese	169	Portugal, Brazil
Malay-Indonesian	135	Malaysia, Indonesia
Japanese	124	Japan
German	118	Germany, Austria, Switzerland
French	117	France, Belgium, Canada, Switzerland
Urdu	88	India, Pakistan
Punjabi	77	India, Pakistan
Korean	68	Korean North & South
Telugu	65	AP (India)
Italian	63	Italy
Tamil	63	Tamilnadu (India), Sri Lanka, Malaysia
Marathi	62	Maharashtra (India)
Javanese	55	Java (Indonesia)
Vietnamese	55	Vietnam
Turkish	52	Turkey
Thai	46	Thailand
Ukranian	44	Ukraine (USSR)
Polish	42	Poland
Swahili	41	East Africa
Kannada	40	Karnataka (India)
Gujarati	37	Gujarat (India)
Malayalam	33	Kerala (India)
Tagalog	33	Philippines
Farsi (Persian)	31	Iran
Hausa	31	Nigeria
Burmese	29	Burma (Myanmar)
Oriya	29	Orissa (India)
Romanian	25	Romania
Pushtu	21	Afghanistan, Pakistan
Dutch-Flemish	21	Netherlands
Sarbo-Croatian	20	Yugoslavia
Assamese	20	Assam (India)
Yoruba	17	Nigeria
Sindhi	15	Pakistan, India
Ibo	15	Nigeria
Amharic	14	Ethiopia
Hungarian (Magyar)	14	Hungary
Azerbaijani	13	Azerbaijan (USSR)
Nepali	12	Nepal
Czech	12	Czechoslovakia
Sinhalese	12	Sri Lanka
Uzbek	12	Uzbekistan (USSR)
Malagasy	11	Madagascar
Greek	11	Greece
Afrikaans	10	South Africa
Kurdish	9	Turkey, Iran, Iraq, USSR
Galla	9	Ethiopia
Madurese	9	Madura (Indonesia)
Swedish	9	Sweden
Bulgarian	9	Bulgaria
Catalan	9	Spain
Malinke	8	West Africa
Kazakh	8	Kazakhstan (USSR)
Tatar	7	Tatar (USSR)
Khmer	7	Cambodia
Ruanda	7	Ruanda, Congo
Quechua	7	Peru, Bolivia
Zulu	7	South Africa
Uighur	7	Sinkiang (China)
Somali	7	Somalia
Luba	7	Congo
Twi-Fante	6	Ghana
Minan Kabau	6	Sumatra (Indonesia)
Ilocano	6	Luzon (Philippines)

Yi (Lolo)	6	China
Xhosa	6	South Africa
Shona	6	Zimbabwe
Norwegian	5	Norway
Finnish	5	Finland
Slovac	5	Czechoslovakia
Armenian	5	Armenia (USSR)
Tibetan	5	Tibet
Santal	5	Eastern India
Albanian	5	Albania
Miao	5	China
Mbunda	5	Angola
Wolof	5	Senegal
Lingala	5	Congo
Rundi	5	Burundi, Congo
Georgian	4	Georgia (USSR)
Hebrew	4	Israel
More	4	Burkina Faso
Mongolian	4	Mongolia, China
Lao	4	Laos
Nyanga	4	Malawi, Zambia
Guarani	4	Paraguay
Batak	4	Sumatra (Indonesia)
Kikuyu	4	Kenya
Kanuri	4	West Africa
Tigrinya	4	Ethiopia
Achinese	3	Sumatra (Indonesia)
Balinese	3	Bali (Indonesia)
Bikol	3	Luzon (Philippines)
Makua	3	Mozambique
Kongo	3	Congo
Bhili	3	Gujarat (India)
Turkmen	3	Turkmen (USSR)
Baluchi	3	Pakistan, Iran
Ewe	3	Ghana, Togo
Tswana	3	Botswana, South Africa
Latvian	2	Latvia (USSR)
Slovenian	2	Yugoslavia
Chuvash	2	Chuvash (USSR)
Gondi	2	Eastern India
Shan	2	Burma
Bemba	2	Zambia
Macedonian	2	Macedonia (Yugoslavia)
Kirghiz	2	Kirghiz (USSR)
Tulu	2	Karnataka (India)
Mende	2	Sierra Leone
Kamba	2	Kenya
Luo	2	Kenya
Mordvin	1	Mordavia (USSR)
Karen	1	Burma
Sidamo	1	Ethiopia
Estonian	1	Estonia (USSR)
Bashkir	1	Bashkir (USSR)
Fon	1	Dahomey

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† Including (Mandarin-560, Cantonese, Wu, Min and Hokka

RELIGIONS

Religions have played a very great part in the evolution of human civilization and culture. They evolved as a set of beliefs concerning the cause, nature and purpose of the universe and grew as an organised system of beliefs that bound people to become a close-knit society. Very often the religions spread out from the lands of their origin.

Hinduism has left its permanent impact on Indian life and culture. Buddhism wrought revolutionary transformation in the life and culture of the peoples of South-East Asia and China. Christianity and Islam spread among the peoples of Asia and Europe kindling latent fires and opening fresh chapters in the history of the world.

The religions of the world may be grouped into three broad classes. 1. Leading religions, 2. Lesser religions and 3. Primitive religions. The leading religions are Buddhism, Christianity, Confucianism, Hinduism and Islam. The lesser religions include Jainism and Sikhism of India, Judaism of Palestine, Shintoism of Japan, Taoism of China and Zoroastrianism originally of Persia. The primitive religions count by the thousands. They are all very small communities, each with a handful of votaries. They are principally found among the aboriginal tribes of Australia, the Americas, India, Burma, South East Asia, Indonesia and Africa.

Buddhism was founded by Gautama Buddha who lived in the 6th century B.C† Gautama, otherwise known as Siddhartha, was the son of an Indian prince, Suddhodana, chief of the Sakyas. Even as a child he was given to contemplation. The sorrows and sufferings of the world tormented his loving heart and he abandoned his princely home, his wife and child and started in pursuit of enlightment at the age of 29. After years of wandering and contemplation Gautama at last found enlightenment while meditating under a great peepul tree. From that day, he came to be known as the *Buddha* or the Enlightened One.

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† The actual dates of Buddha's birth and death are disputed.

The Buddha preached that emancipation from the cycle of rebirths, i.e., *Nirvana*, can be attained by a path of self-purification. He attached little importance to rituals and ceremonies in which the Brahmin priests indulged. He does not appear to have even envisaged the existence of a Supreme God. He preached in the vernacular of the people, a simple doctrine of love and mercy which appealed to all.

Buddhism is essentially a religion of kindness, humanity and equality. It denounces all claims to superiority on grounds of birth or caste. The eminence or lowness of men is determined by their own conduct and actions.

Two or three centuries after the death of the Buddha, we find the Buddhist religion divided into two broad schools, the *Hinayana* and the *Mahayana*. The Hinayana school prided itself on maintaining the teachings of the Buddha in their original form. The Mahayana school converted the human Buddha—*Sakya muni*—into an eternal and supreme deity, presiding over the world and succouring his devotees.

Mahayana Buddhism is prevalent in

Religion in Russia

The Soviet Parliament in 1990 overwhelmingly adopted a new law on freedom of religion, easing decades of strict prohibitions on religious instruction at home and in private schools.

The Soviet Constitution officially permits freedom of conscience, but the new law re-emphasises that political leaders cannot interfere with religious activities.

The law, adopted 341-1 with one abstention in Supreme Soviet, specifies that the Government will finance neither religious activities nor "propaganda of atheism."

The new law allows religious groups to set up "societies, brotherhood associations" and other such groups. It says religious organisations can send people abroad for spiritual study and receive foreign students in the Soviet Union. It permits the Government to continue returning churches for use as religious buildings.

The law guarantees the right to study and teach religion either individually or with others. But a clause allowing secular facilities to be used for religious instructions after regular school hours touched off a fierce debate and was defeated by one chamber of the legislature.

China, Tibet, Korea and Mongolia. Hinayana Buddhism is prevalent in Burma, Sri Lanka, Kampuchea and Vietnam.

The most sacred places of Buddhism are Lumbini in Nepal, where the Buddha was born, the Bodh Gaya (Bihar), where he received enlightenment and Kusinagara (UP), where he attained *nirvana*.

Christianity founded by Jesus Christ now commands the largest following in the world. Christ was born in B.C. 4 in Judaea.* He started preaching about the Kingdom of God when he was thirty. His activities roused the opposition of the Jewish highpriests who accused him of blasphemy.

He was crucified under the orders of Pontius Pilate, the Roman Governor. After three days, Christ was resurrected from the dead. With the Resurrection of Christ, his disciples took heart and went about preaching the Kingdom of God to all the peoples of the world.

Christianity spread throughout the Roman Empire where it was made the state religion in the 4th century A.D. Later, the Church split into two broad groups - the Western Church under the Pope in Rome and the Eastern Churches under the Patriarchates of Antioch, Alexandria and Constantinople. Still later, further disruptions took place. The Roman Church was broken up by Protestantism, while in the Eastern Churches, many communities like the Armenians, Ethiopians, Russians and Italians set up their own Patriarchates.

Jerusalem, where Christ lived and preached, is the most sacred place for Christians all over the world.

Confucianism: Kung Fu Tsu, better known as Confucius, was born in 551 B.C. in China. Even as a young man, he had an ardent thirst for knowledge. When still in his youth, he met and talked with Lao-tse who was then a famous figure. Struggling through poverty, Confucius first became a minor civil servant and later rose to be the magistrate of a state. His brilliant administration evoked the jealousy of others, who conspired to bring about his dismissal in 496 B.C. Thereafter he wandered about penniless and homeless, until in 478 B.C. he died, aged seventy three.

After his death, his sayings were collected in the *analects* and he was honoured throughout China, as a deity ranking with the deities of Heaven and Earth. Confucius was a moralist rather than the founder of a religion. He conserved, systematised and taught the age-old teachings of China. He advocated regularity in life, temperance in food and drink and emphasised the importance of learning, loyalty and truthfulness. He formulated a golden rule of reciprocity, "what you do not want done to yourself, do not do to others" - just a step short of the Laotsean and Christian doctrine of returning good for evil.

Peking is the city sacred to the adherents of both Taoism and Confucianism.

Hinduism: The world *Hindu* originally was the Persian rendering of the Indian word *Sindhu*—the Sanskrit name of the river Indus. The Persian name *Hindu* must have come into being in the 6th century B.C. when the territory round Indus formed part of the Persian Empire. But the name disappeared from India, with the exit of the Persians. It came back to India, centuries later, with the Muslim invasions from the north-west.

At that time, however, the word *Hindu* simply meant *Indian* and had no religious connotation. Subsequently, under the Mughal emperors, the word assumed a religious tint and under the British it came to be applied exclusively to the people, who followed the age-old religion of India.

The basis of Hinduism lies in the four *Vedas* of the Aryans. The word *Veda* is derived from *vid*, to know. The vedas are known as *sruti*, or that which is heard or revealed. The orthodox Hindus think that the vedas are *anadi*, without a beginning. Others believe that the vedas were revealed to ancient *rishis* (sages).

The *Rigveda* is the earliest and the most important of the four vedas. It is the oldest scripture in the world having been composed in the third millennium B.C. It consists of over 1000 hymns, a heterogeneous collection of prayers to gods like *Agni, Vayu, Varuna, Indra, Mitra, Soma, Ushus* and others, instructions on rituals, incantations, songs and verses on nature. The other three vedas are more specialised. The *Yajur Veda* deals mainly with sacrificial invocations, the *Sama Veda* contains melodic invocations and the

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* The date is disputed. See Chapter 'Outline of History' in part one

Atharva Veda deals with medicines and magical incantations.

Each Veda is divided into *mantras* (hymns), *Brahmanas* which explain the mantras and rituals, *Aranyakas*, mystic teachings meant for meditation in forests and *Upanishads*, speculations on Being and Reality.

The early Aryan gods were deifications of natural forces, Agni, Varuna, Soma, Surya etc. They were worshipped with sacrifice. There were no temples or images. The sacrifices were performed on open altars, where a wood fire was lighted, and offerings of food and drink, in the shape of meat, fat, butter, milk, cakes of barley and the spirituous drink *soma*, were offered to the gods, who were supposed to dwell in the sky. This was the vedic rite of *homa*, the quintessence of vedic religion.

When the Aryans came to India, they encountered a highly civilized people - the Dravidians - the builders of the City Civilization of the Indus Valley. They defeated the Dravidians and probably enslaved them. But though superior in war, the Aryans were far behind the Dravidians in culture. Before long they succumbed to the superior culture of the pre-Aryans and adopted it. *Graecia capta ferum victorem cepit** (Enslaved Greece made a slave of her rough conqueror).

The mainstay of popular Hinduism is the later vedic literature which consists of the *puranas* (old stories) and *itihasas* (epics). There are 18 puranas: *Matsya, Markandeya, Bhagavata, Bhavishya, Brahma, Brahmanda, Brahmavaivarta, Vayu, Vishnu, Varaha, Vamana, Agni, Naradiya, Padma, Linga, Garuda, Kurma* and *Skanda*. There are also a number of *upa puranas* or minor puranas. Some puranas are believed to date back to the pre-Christian era. But many are believed to have been written between the third and the seventh centuries A.D.

The *Itihasas* or epics are two - the *Ramayana* by Valmiki and the *Mahabharata* by Vyasa. Both these great works drew their inspiration from pre-Aryan folklore. The story of Rama or *Ramayana* looks like a blend of three distinct stories of pre-Aryan origin, put together at different times and finally embellished as a national poem of epic dimensions. The *Mahabharata*, on the other hand, embodies the legends of the Aryans and the non-Aryans and was created consciously as the national poem of a new Hindu nation of mixed origin welded into one people under Brahmana guidance.**

The popular gods of the early Aryans, Indra, Varuna, Agni, Soma, Surya and others yielded place in course of time to a group of more powerful and more personal gods, more profound and cosmic and more philosophical in conception - namely the puranic gods of Hinduism headed by *Siva—Uma* and *Sri-Vishnu*. *Siva* and *Uma* are clearly pre-Aryan gods. *Vishnu* was partly Aryan—a form of Sun god—and partly Dravidian-the blue sky-god—*Sri* was an Aryan goddess to start with, the Indian counterpart of the European *Ceres*, but in her association with Vishnu as *Gajalakshmi*, she is indigenous and pre-Aryan.

The outstanding instance of the Dravidisation of the Aryan religion is found in the preponderant place given to the *puja* form of worship compared to Aryan *homa*. Puja rite, which involves the offering of flowers, fruits, leaves, water etc. to an image or symbol of divinity, is characteristically Dravidian. This is now the everyday form of worship for all Hindus, the homa being kept up artificially among limited groups of Brahmins or Kshatriyas.

The imprimatur or theological sanction for puja is found in the *Bhagavad Gita*† which is the bedrock of modern Hinduism.

"If any offers me with devotion, a leaf, a flower, a fruit or water, I receive that offered in devotion by the person whose soul is disciplined." Gita IX, 26.

Hinduism emerged as the national religion by a brilliant synthesis of Aryan and non-Aryan ideas. This ability to adopt or adjust to alien ideas has made Hinduism a highly receptive and tolerant religion. It is this receptivity that has helped it to survive the onslaughts of other religions and influences through centuries.

When Buddhism rose as a challenge to orthodox Hinduism, Hinduism reacted by sanctifying the Buddha as an *avatar* of Vishnu. Similarly, the Jain idea of non-violence or non-injury to living things appealed to many people as a gospel of mercy, good will and fellowship with all living creatures. Hinduism took over the idea and worked it out as the doctrine of *Ahimsa,* which was elevated as the highest of all *dharmas.*

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* Horace.

** S.K. Chatterjee–*Vedic Age, Bharatiya Vidya Bhavan.*

† Bhagavad Gita occurs in the Mahabharata.

In spite of its great adaptability and accommodation, Hinduism has been rocked by dissensions and disputations. The bitter struggle between *Vaishnavites* and *Saivaites,* between supporters of God Vishnu and God Siva, lasted for a long time. But this was rather a struggle for supremacy in the Hindu fold - never a segregation from it.

From time to time, Hindu reformers have sprung up, brilliant intellects and devout ascetics like *Sankaracharya* (8th century A.D.), *Ramanuja* (12th century) and *Madhwa* (13th century) who have not merely restored popular faith but also countered heretical or fissiparous tendencies, by a re-interpretation of Hindu philosophy and reformation of Hindu practices, to meet the demands of the times.

Modern Hinduism may be dated from the days of *Sri Sankaracharya,* more than 1000 years ago. Sankara lived in the 8th century A.D. He was born at Kaladi in Kerala in a Namboodiri Brahmin family. He is by far the greatest of Hindu reformers. Before he died at the early age of 32, he travelled through India thrice, debating with scholars and expounding his theory of *Advaita* or monism. He was not only a great thinker but also a great organiser.

Among the most durable monuments to his organising zeal are the famous monasteries of Sringeri in Karnataka, Dwaraka in Gujarat, Puri in Orissa and Badrinath on the snowy heights of the Himalayas. He purged Hinduism of many evil cults and practices. The worship of the Mother Goddess, who was called by many names - *Devi, Durga, Kali, Lakshmi, Parvati, Amba, Amman etc.* - had degenerated into licentiousness.

Devi worship in the past was part of the *Sakta* cult with its five Makaras, *matsya* (fish), *mamsa* (meat), *madya* (liquor), *mudra* (dance) and *maithuna* (copulation). Sankara reformed this cult and restored it to its original purity. Similarly he is said to have put down the *Kapalikas,* who indulged in human sacrifices to appease God Bhairava. Sankara thus rejuvenated Hinduism and gave it a new philosophy and a new look.

Ramanuja, the next great reformer, lived in the 12th century A.D. He was born in Sriperumbudur in Tamil Nadu. He modified Sankara's philosophy of *Advaita* and preached a new philosophy *Visishtadvaita* or qualified monism. Ramanuja laid great emphasis on *bhaktimarga* or deliverance by way of devotion to a compassionate god, in contrast to *Karmamarga* or the way of deliverance by the performance of vedic rites.

Madhwa, born in 1238, near Udipi in Karnataka is the third of the great reformers. He is the supreme exponent of *dvaita* or dualism. All these great reformers stressed the importance of *bhakti* or devotion to a personal god.

The renovation of Hinduism started by this great trio of the south, was continued by a number of saints and sages in the rest of India: Ramananda of Allahabad, Vallabhacharya of Benares, Namadeva of Maharashtra, (who unlike others came from a low caste), Mirabai of Rajasthan (a princess turned *sanyasin*), Ekanath, Tukaram and Ramdas, all from Maharashtra, Surdas, the blind poet of Agra, Lalla of Kashmir, Sant Kabir of Varanasi and others.

The greatest of the *bhakti* leaders and one of the greatest reformers of Hindu religion is Chaitanya (1485-1533), who hailed from a Brahmin family in Bengal. At the age of 24 he became a sanyasin and spent the rest of his life, preaching the bhakti movement all over North India.

Organised work for the re-vitalisation of Hinduism started with Swami Dayananda Saraswati (1824-1883). He founded the *Arya Samaj* and started the *Sudhi* (purification) movement, for the conversion of non-Hindus to Hinduism. He was a great Sanskrit scholar and admonished his followers to go back to the Vedas.

The next great reformer, in point of time, was *Ramakrishna Paramahamsa* (1836-1886). He was a poor priest in a temple of Calcutta, without any formal education, eastern or western. But he was a deeply religious man, who believed in the inherent truth of all religions. His catholicity, mysticism and spiritual fervour attracted a small band of devoted disciples. They formed a Mission, named after him, the Ramakrishna Mission.

The most famous leader of the Mission was Narendranath Datta, an English educated disciple of Paramahamsa. In later years, he became famous as *Swami Vivekananda* and carried the message of Hinduism to far off countries like USA. The Ramakrishna Mission stands for social and religious reform, based on the ancient culture of India.

Islam: In Arabic, Islam means submission, obedience or peace. It is meant as obedience and submission to God to attain peace in the world. The believers of this universal religion are called Muslims. They believe in one and only God, His Angels, His Books, as completed by the Quran, as the word of God revealed to Prophet Muhammad through Angel Gabriel and His Messengers, with Muhammad being the last of them all.

Some call Islam *Mohammedanism* and address believers as *Mohammedans*. Muslims reject this as the misnomer will imply that the religion was founded by Muhammad, a mortal being. They believe that Muhammad was commissioned as prophet by God to teach the word of God.

The Muslims have to bear witness to the oneness of God and the messengership of Muhammad; have to observe prayers five times daily with a weekly Juma prayer on Friday noons; have to pay a religious tax of 'Zakath' to the rightful beneficiaries, the minimum of which is two and a half per cent of the annual net income or of the total value of stock in business after discounting expenses and credits; have to keep the dawn-to-dusk fast, without food, drinks and smoking, in the ninth month of Ramzan of the Islamic Year. They have to make a pilgrimage to the annual congregation called *Haj* to Makkah (Mecca) in Saudi Arabia in the second week of the 12th month of Dul Haj. This pilgrimage once in a lifetime, to Kabah in Makkah is obligatory to the Muslims, male or female, who are financially, physically and mentally fit.

Every Muslim turns his face five times daily towards Kabah, the small cubical mosque in Makkah. They believe that it was the first mosque to be dedicated to the pure worship of the one and only God.

The Muslim Era began with the emigration of Muhammad from Makkah to Madina in 622 A.D. The Islamic Calendar is lunar, determined by the sight of the Moon. It is of 12 months, and each month is either thirty or twenty-nine days, depending upon the position of the Moon.

The two main festivals of the Muslims are *Idul Fiter* and *Idul Azha* publicised as 'Ramazan'. Idul Fiter is the feast of breaking the fast of Ramazan on the first day of the tenth month of Shavval. Idul Azha is the festival of sacrifice, mentioned otherwise as '*Bakrid*' in calendars. This falls two months after Ramazan, on the tenth day of the last month of Dul Haj, a day after the holy congregation of Haj at Makkah. Prophet's day or Miladunnabi (the birthday of Prophet Muhammad) and Muharram (the day of sacrifice of Imam Husain, grandson of Muhammad) are also celebrated by Muslims.

Islam had its influence in the three continents of Asia, Africa and Europe. It gave right of property to women 12 centuries before England adopted it in theory.

As per 1981 statistics, there are fifty-seven crore (570 million) Muslims in the world. Indonesia with 14 crore (140 million) tops the list. India has nine crore Muslims with Bangladesh 7.6, Pakistan 7.5, Nigeria 6.2, Russia 6, and China 5 crore.

Jainism derives its name from Jaina (the conqueror), the second name of Vardhamana Mahavira. Mahavira, like Buddha belonged to a princely family in Vaisali. At the age of 30, Mahavira, renounced the world and spent 12 years in austerity and meditation in search of truth. At last, at the age of 42, while meditating under an Asoka tree, he received enlightenment. He was thereafter known as Jaina, the Conqueror.

According to Jain legends, Mahavira was born at the beginning of the sixth century B.C.* The actual dates of his birth and death are hotly disputed.

Jainism preaches that by following the threefold path, all souls will be released from the cycle of births and deaths and will reach the pure and blissful abode above (Sidha Sila). The threefold path consists of three jewels (triratna), right belief, right cognition and right conduct.

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*"The 2500th Nirvana Anniversary of Mahavira was celebrated as a national festival for one year commencing on 13th November, 1974."

After A.D. 82 Jainism split into two groups, the Digambaras and the Svetambaras. The Digambaras wore no clothes, while the Svetambaras wore white clothes. Both groups believed in overcoming the senses by meditation and penance.

The Jains have many places of pilgrimage in India. The most important of them are the mountain of Samata, near Parsanath in Bihar, where Parsua is said to have attained nirvana; Papapuri or Pavapuri where Mahavira died; Mount Abu in Rajasthan and Shravenabelagola in Karnataka, where the temples of Trithankara, Adinath and Bahubali are situated, and the high monolithic statue of Gomateshwar, son of Rishabha, stands.

Judaism, the religion of the Hebrews was in existence long before its first prophet and law-giver Moses came on the scene. The first historical figure among the Hebrews is Abraham, who left Ur in Chaldaea with the Hebrew tribe, about 2000 B.C. After a long period of wandering in the Arabian desert, the Hebrews at last settled in Egypt. However, they were enslaved by the mighty Pharaohs.

It was left to Moses to liberate the Hebrews from Egyptian bondage and to lead them to a land of milk and honey promised them by God. On the way, at Mount Sinai, Moses received the 'Ten Commandments' from 'Yahweh' or Jehovah, the Supreme God. By the time the Hebrews had settled in the Promised Land, the first five books of Moses had been written.

The Hebrews organised themselves into the Kingdom of Israel round about 1000 B.C. In 586 B.C. Nebuchadnessar conquered Israel and carried off the Hebrews into the Babylonian captivity. With the conquest of Palestine by Cyrus, the Hebrews were resettled in Israel. It was during this period that the writings of the Prophets and the Psalms were codified.

The Law, the Prophets and the Psalms remained as separate holy books until the time of Christ, when they were put together as the Hebrew Bible or the Old Testament. The Talmud, which is a collection of detailed laws for the guidance of civil, domestic and social life, was completed during the 4th and 5th centuries A.D.

Judaism is a simple religion which aims at a moral life. To the Jews, right conduct is more important than right belief. According to the Talmud every good man is assured of heaven, the gentile who observes the moral law being the equal of the High Priest. Judaism is free from sentimentalism and is averse to self-imposed suffering, idleness and asceticism. Jerusalem is the Holy City of the Jews.

Shintoism: Shinto is a Japanese ethnic religion. The word "Shinto" means "the way of the spirits', the underlying principle being ancestor worship. It must have evolved gradually, accumulating fresh material as ages passed without any religious reformer directing it or altering it. It has no sacred books or moral code.

Shinto is the religion of the followers of Mikado, the Japanese Emperor.

The Mikado is, in fact, the focal point of the religion, the only God that it knows. There are, however, innumerable deities. Except for certain rituals developed through the ages, Shinto has no religious content or appeal.

Shinto has declined rapidly after the Japanese emperor surrendered his claim to divinity in 1947.

The central shrine of Shintoism is at Ise, in Central Japan, to which all devout Japanese make pilgrimages. Shintos are found almost exclusively in Japan.

Sikhism: The Sikh religion was founded by Guru Nanak who lived in the Punjab between A.D. 1469 and 1539. He was very much troubled at the frequent quarrels between Hindus and Muslims. He preached that there was only one God for Hindus and Muslims and tried to work out a synthesis of the two religions. His mission became popular and he very soon had a large following. He travelled extensively, going as far as Mecca and was in frequent contact with the leading sages of Hindu and Muslim religions. On his death, he was succeeded by his disciples who became Gurus in their turn.

The Gurus have built up the modern Sikh community. The fifth guru, Guru Arjan Dev (1581-1606) compiled the *Adi Granth*, the first sacred book of the Sikhs. The most famous Guru is Guru Gobind Singh (d. 1708). He organised the Sikhs into a militant community. He instituted *Pahul* or baptism in water stirred by a dagger.

Those who were baptised were known as

the *Khalsa* (pure) with the designation *Singh* (lion). All members of the Khalsa had to wear the 5 k's—*Kes* (long hair), *Kangha* (comb), *Kripan* (sword), *Kachcha* (short drawers) and *Kara* (steel bracelet). The Khalsa soon emerged as a valorous fighting unit. It enabled the Sikhs to form a state of their own under Maharaja Ranjit Singh (d 1839).

The growth of the British power in India reduced the Sikhs to submission. But they continued to be fighters and soon came to be described as the fighting arm of the British. The majority of the Sikh population is found in the Punjab and the city of Delhi. Their most important sacred place is the Golden Temple at Amritsar.

Taoism: Lao-tse, the founder of Taoism, was born in China about the sixth century B.C. Lao-tse put down his teachings in a book called Tao-Teh-King, which became the Taoist Bible. "Tao" originally meant "road" or way, but later came to signify the perfect reality. Taoism preached goodness, simplicity, purity and gentleness in everyday life. The three jewels of Taoism are compassion, moderation and humility. Lao-tse taught what Christ later preached, the return of good for evil. :When you are reviled, cherish no resentment, be kind and generous without seeking any return".

Lao-tse's philosophy, highbrow as it was, failed to evoke response in the common man. The disciples of Lao-tse used "Tao-Teh-King" as a source book for magic and Taoism degenerated into mere ritual. By the middle of the second century B.C. Taoism had debased itself so far as to deify Lao-Tse who was worshipped with sacrifice.

Zoroastrianism: Zarathushtra or Zoroaster, the founder of Zoroastrianism, was born in Medea (modern Iran) about 660 B.C. He thought that life was a struggle between the forces of good and evil. The spirit of good was Ahura Mazda with its helper mithras, the Light. The evil spirit was Angra Mainyu or Ahriman, the Lie Demon. Man could not be neutral in the struggle. He had to fight for right and live a righteous life. Those who lived righteously went to paradise which was a state of immortal holiness in thought, word and deed. The impious were condemned to an eternal hell of evil thoughts and deeds and physical torment. By 500 B.C. Zoroastrianism had become the leading faith in Persia and Medea.

Archbishop of Canterbury

George Carey, 55, Bishop of Bath and Wells in Southwest England, succeeded Dr. Robert Runcie as the Archbishop of Canterbury, the spiritual head of the Church of England and 70 million Anglicans around the world, in 1991.

George Leonard Carey, born in London's poor working class district of East End, is described as a "green bishop who rose from rags to purple". The son of a hospital porter, he grew up in public housing and recalls sharing his brother's shoes.

The sayings of Zoroaster were gathered into a book, called Avesta or Zend Avesta, which became the Bible of the Persians.

The Zoroastrians who fled to India during the 8th century, are the ancestors of the present Parsi community in India.

Estimated Religious Population of the World

Religionists	World	%
Christians	1,644,396,500	32.9
Roman Cath.	926,194,600	18.5
Protestants	332,016,400	6.6
Orthodox	160,063,500	3.2
Anglicans	69,971,500	1.4
Other	156,150,500	3.1
Muslims	860,388,300	17.2
Non-religious	836,327,770	16.7
Hindus	655,695,200	13.1
Buddhists	309,626,100	6.2
Atheists	225,126,500	4.5
Chinese folk religionists	187,517,100	3.7
New Religionists	110,706,100	2.2
Tribal Religionists	94,758,750	1.9
Jews	18,075,400	0.4
Sikhs	16,604,150	0.3
Shamanists	12,762,200	0.2
Confucians	5,914,400	0.1
Bahai's	4,627,900	0.1
Jains	3,462,820	0.1
Shintoists	3,403,010	0.1
Other Religionists	8,216,800	0.2
World Population	4,997,609,000	100.0

Source: Encyclopaedia Britannica Book of the Year.

CLASSICAL WRITERS

'The Classics' originally meant literature or art of ancient Greece and Rome. With the passage of time it acquired the broader sense of any literary or artistic work of the highest order, enduring interests, quality or style.

The following is a list of classical writers in *Sanskrit, Greek* and *Latin* with their important works, in alphabetical order.

Aeschylus (526-456 B.C.) Athenian dramatist, *Prometheus Unbound, The Persians, The Seven against Thebes, Oresteia,* etc.

Aesop (c. 620–560 BC) Greek fabulist, *Aesop's Fables.*

Amaruka (7th century AD) Sanskrit poet. *Amaruka Sataka* (100 stanzas of Amaruka).

Anacreon (c. 6th century B.C.) Famous Greek lyric poet.

Aquinas, St. Thomas (c. 1225–1274) Italian philosopher and theologian, *Summa Theologica, Summa Contra Gentiles.*

Aristophanes (c. 444–c. 385 B.C.) Athenian satirist and comic poet, *Lysistratea, Birds, Peace, Acharnians* etc.

Aristotle (384–322 B.C.) Greek Philosopher, *Rhetorics, Politics, Natural History, Poetics.*

Asvagosha (A.D. 1st cent.) Sanskrit poet, *Buddhacharita* (Story of Buddha).

Bana (A.D. 7th cent.) Sanskrit prose writer. *Harshacharita* (Story of Harsha), *Kadambari,* a romantic story.

Bhadrabahu (4th cent. B.C.) *Kalpasutra (a manual on ceremonies).*

Bharavi (A.D. 6th cent.) Sanskrit poet, *Kiratharjuneeya* (Arjuna and Kiratha).

Bhatti (A.D. 7th cent.) Sanskrit poet. *Bhattikavya* (Bhatti's poem), a story of Rama. (100 Stanzas on morals).

Bharthruhari (A.D. 7th cent.) Sanskrit poet. *Nitishataka Shrinyaran Shataka* (100 stanzas on love), *Bhaktishataka* (100 stanzas on piety).

Bhasa (A.D. 5th cent.) A prolific Sanskrit writer. Wrote 13 plays. *Swapana Vasavadatta* (Vasavadatta's Vision), *Pratinja Yaugandharayana* (Vow of Yaugandharaya), *Charudatta.*

Bhavabhuti (A.D. 8th cent.) Sanskrit dramatist *Malathimadhava* (story of Malathi and Madhava), *Mahaviracharita* (Story of the Great Hero), *Uttara Ramacharita* (Later deeds of Rama).

Bilhana (A.D. 12th cent.) Sanskrit poet, *Vikramankadevacharita* (Story of Vikramanka–Chalukyan emperor). *Chaurapanchasika* (Fifty stanzas on the thief).

Dandin (7th cent . A.D.) Sanskrit prose writer. *Dasakumara Charita* (Tales of the Ten Princes).

Diogenes (412-323 B.C.). Greek philosopher, founder of Cynic philosophy.

Epicurus (342-270 B.C.) Greek philosopher, founder of the Epicurean School. *Letters to Herodotus, Menocecus and others. De rerum natura.*

Euripides (480-406 B.C.) Greek dramatist. *Alcestis, Bacchae.*

Gunadhya (1st cent. A.D.) Sanskrit writer. *Brahat Katha* (the great story), a collection of many stories.

Hala (Satavahana King) (1st cent. A.D.) Sanskrit poet. *Saptasati* (Seven Hundred Verses).

Herodotus (c. 485-425 B.C.) Greek historian. *History of the Persian Invasion of Greece.*

Homer (c. 700 B.C.) Greek epic poet. *Illiad, Odyssey.*

Horace (65-8 B.C.) Latin poet. *Satires, Epodes, Odes.*

Jayadeva (12th cent. A.D.) Sanskrit poet. *Gita Govinda* (Song of Govinda).

Jimutavahana (12th cent. A.D.) *Dayabhaga,* a treatise relating to Hindu inheritance–part of a great compilation. *Dharma Sutra.*

Juvenal (Decimus Junius Juvenalis) (AD 60-140), Latin poet, *Satires.*

Kalhana (12th cent. A.D.) Sanskrit writer. *Rajatharangini* (River of Kings–a story of the kings of Kashmir).

Kalidasa (5th cent. A.D.) The greatest Sanskrit poet. Plays: *Malavikagnimitra* (Malavika and Agnimitra – a comedy of harem intrigue), *Vikramorvasiyam* (Urvasi won by valour), *Abhijnana Sakunthalam* (Recognition of Sakunthala). Epics: *Raghu Vamsa* (Dynasty of Raghu), *Kumara Sambhavom* (Birth of the War god). Lyrics: *Meghdoot* (Cloud Messenger), *Ritu Samhara* (Garland of Seasons).

Kautilya (Chanakya) (4th cent. B.C.) was the Chief Minister of Chandragupta Maurya. A well-seasoned politician, he practised Machiavellian tactics many centuries before Machiavelli. The only work attributed to him is *Artha Sastra* (Science of Statecraft).

Kumaradasa (6th cent. A.D.) Sanskrit poet. *Janakiharana* (Abduction of Janaki).

Magha (7th cent. A.D.) Sanskrit poet. *Sisupala Vadhom* (Slaying of Sisupala).

Mahendra Vikraman (a Pallava King) Sanskrit poet. *Matta Vilasa* (Sport of a Drunkard).

Manu (2000 B.C.) (legendary author) Sanskrit law-giver. *Manu Smrithi* (The Code of Manu).

Narayana (12th cent. A.D.) Sanskrit story teller. *Hitopadesa* (Salutary Advice) – selected stories from *Panchathanthra*.

Naya Chandra Suri (14th cent.) Sanskrit poet. *Hammira Mahakavya* (Epic of Hammira).

Ovid (Publius Ovidius Naso) (43 B.C. – 16 A.D.) Latin poet. *Tristia, Amores; Persephone Rapta.*

Panini (4th cent. B.C.) Sanskrit grammarian. *Ashtadhyayi* (Book of Eight Chapters).

Patanjali (2nd cent. B.C.) Sanskrit grammarian. *Mahabhashyam* (Commentary on Panini).

Plato (427-347 B.C.) Greek philosopher. *The Republic, Apology of Socrates, Phaedo,*

English a War Casualty

Advanced, high-tech weaponry brought new wartime phrases to the attention of TV viewers and newspaper readers throughout the world during the Gulf War in 1991.

In World War II, there were standby Portmanteau words like Snafu (situation normal, all fouled up) and Radar (radio detection and ranging).

In the Gulf War, where the computer micro-chip was a potent weapon, the English language became an early casualty, bombarded into alphabetical fragments that form a language of their own.

The acronyms reflected both progress in the development of things like the remote-controlled Slam (stand-off land attack missile) and also the military's penchant for not telling things quite as they are-"collateral damage" for example, when the Generals really meant "civilian casualties."

"Cas jets with AWACS and flired fire harm at triple-A and Sam." Translation: Fighter jet pilots fly Cas (control air support) missions, along with AWACS (airborne warning and control system) aircraft (a sort of radar in the sky), using all-weather, night vision Flir (forward looking infrared system) and fire radar busting Harm (high radiation anti-radar missiles) at an opposing force's anti-aircraft artillery and Sam (surface-to-air missile) defences.

Other phrases like Art (airborne radar technician) held the key to U.S. and allied air superiority over Iraq.

Each sortie was followed by a BDA, for battle damage assessment, which in a two-seater aircraft was done by both pilot and GIB (the guy in the back seat, the naval flight officer).

Odd-looking Humvees, high mobility multi-wheeled vehicles, roared on the beach-the Arabian desert. Troops rode Humvees and never went out without NBC as peer DOD (U.S. department of defence) regulations.

On the lighter side, airmen had a twice-daily routine that broke the constant flow of Taf planes, stooping to search out and pick up any pebbles or other objects. This is called the "Fod walk", for foreign object damage.

As they used to say: "Roger" (message received and understood, from signalling code R for.....)

Laws.

Pliny the Elder (23-79 A.D.) Latin philosopher. His *Natural History* is an encyclopaedia of all scientific knowledge available at the time.

Plutarch (c. A.D. 46-120) Latin biographer, *Lives.*

Rajasekhara (10th cent, A.D.) *Sanskrit. Karpoora Manjari,* a romantic drama.

Sandhyakara (12th cent. A.D.) Sanskrit poet. *Rama Charitha* (Story of Rama).

Sappho of Lesbos (early 6th cent. B.C.) Greek poetess of romance and amour. *Unrequited Love.*

Seneca, Lucius Annaeus (c. B. C.-56 A.D.). Stoic philosopher, tutor of Nero. Sentenced to end his own life, he killed himself courageously.

Somadeva (11th cent. A.D.) Sanskrit poet. *Katha Sarit Sagara* (Ocean of Stories) – collection of stories.

Sophocles (495–406 B.C.) Greek dramatist. *Antigone, Oedipus the King, Oedipus at Colonus.*

Subandhu (7th cent. A.D.) Sanskrit poet. *Vasavadatta.*

Sudraka (5th cent. A.D.) Sanskrit dramatist. *Mrichhakatika* (Clay cart).

Tacitus, Caius Cornelius (c. 55-120 A.D.) Latin historian. *Germania, Annals, Histories.*

Thucydides (c. 460-399 B.C.) Greek historian of the *Peloponnesian War.*

Vakpati (8th cent, A.D.) Sanskrit poet. *Ganda Vadha* (Slaying of Ganda) describes the exploits of Yasovarma, King of Kanyakubja.

Valmiki (6th cent, B.C.) Sanskrit epic poet. *Ramayana.*

Vatsyayana (5th cent. A.D.) Sanskrit writer. *Kama Sutra* (Art of Sex).

Vidyapathi (1350-1460): Poet who wrote in Maithili. *Kirthilatha, Kirthipathaka.*

Vijneswara (11th cent. A.D.) Sanskrit writer. *Mitakshara, a treatise on the law of Hindu inheritance.*

Virgil (Publius Vergilius Maro) *(70-19 B.C.)* Latin epic poet. *Aeneid, Georgics.*

Visakhadatta (6th cent. A.D.) Sanskrit dramatist, *Mudra Rakshasa* (Minister's Signet Ring), *Devi Chandragupta* (The Queen and Chandragupta) – political dramas.

Vishnu Sharma (Legendary author) Sanskrit prose writer. *Pancha Tantra* (Five Treatises) – a collection of tales.

Vyasa (6th cent. B.C.) Sanskrit epic poet. *Mahabharata,* considered the longest epic in the world. It has nearly 100,000 stanzas.

Xenophon (444-359 B.C.) Greek soldier, historian, and author. *Anabasis* (The Retreat of the Ten Thousand).

Zeno of Citium (c. 340-264 B.C.) Greek philosopher, founder of the Stoic school. Zeno taught in *Stoa Poikile* of Athens, hence *Stoic.*

WELL KNOWN BOOKS

A

A China Passage: *John Kenneth Galbraith*
A Critique of Pure Reason: *Immanuel Kant*
A Dangerous Place: *Daniel Patrick Moynihan*
A Doll's House: *Ibsen*
Adonis: *P.B. Shelley*
A Farewell to Arms: *Ernest Hemingway*
A Guide for the Perplexed: *E.F. Schumacher*
A Midsummer Night's Dream: *William Shakespeare*
A Million Mutinies Now: *V.S. Naipaul*
Ancient Evenings: *Norman Mailer*
A Passage to England: *Nirad C. Choudhuri*
A Passage to India: *E.M. Forster*
A Prisoner's Scrapbook: *L.K. Advani*
A Sense of Time: *H.S. Vatsyayan*
A Spaniard in the Works: *John Lennon*
A Tale of Two Cities: *Charles Dickens*
A Thousand Days: *Arthur M. Schlesinger*
A Village by the Sea: *Anitha Desai*
A Voice for Freedom: *Nayantara Sehgal*
A Week with Gandhi: *Louis Fischer*
A Woman's Life: *Guy de Maupassant*
Adam Bede: *George Eliot*
Adventures of Tom Sawyer, The & Adventures of Huckleberry Finn, The: *Mark Twain (Samuel Longhorne Clemens)*
Adventures of Sherlock Holmes, The: *Arthur Conan Doyle*
Advice and Consent: *Allen Drury*
Affluent Society, The: *John Kenneth Galbraith*
Age of Reason, The: *Jean Paul Sartre*
Agni Veena: *Kazi Nazrul Islam*
Agony and the Ecstasy, The: *Irving Stone*

Akbarnama: *Abdul Fazal*
Alaska Unbound: *James Michener*
Alexander Quartet: *Lawrence Durrel*
Alice in Wonderland: *Lewis Carroll*
All's Well that Ends Well: *William Shakespeare*
All Quiet on the Western Front: *Erick Maria Remarque*
All the Kings Men: *Robert Penn Warren*
All the President's Men: *Carl Bernstein & Bob Woodward*
All Things Bright and Beautiful: *James Herriot*
Amar Kosh: *Amar Singh*
An American Tragedy: *Theodore Dreiser*
An Autobiography: *Jawaharlal Nehru*
An Idealist View of Life: *Dr. S. Radhakrishnan*
Anandmath: *Bankim Chandra Chatterjee*
And Quiet Flows the Don: *Mikhail Sholokhov*
Androcles and the Lion: *George Bernard Shaw*
Animal Farm: *George Orwell*
Anna Karenina: *Leo Tolstoy*
Antony and Cleopatra: *William Shakespeare*
Ape and Essence: *Aldous Huxley*
Apple Cart: *George Bernard Shaw*
Area of Darkness: *V.S. Naipaul*
Arms and the Man: *George Bernard Shaw*
Around the World in Eighty Days: *Jules Verne*
Arrangement, The: *Elia Kazan*
Arrowsmith: *Sinclair Lewis*
As You Like It: *William Shakespeare*
Asia and Western Dominance: *K.M. Panikkar*
Asian Drama: *Gunnar Myrdal*
August 1914: *Alexander Solzhenitsyn*
Autobiography of an Unknown Indian: *Nirad C. Choudhuri*

B

Babbit: *Sinclair Lewis*
Back to Methuselah: *George Bernard Shaw*
Bandicoot Run: *Manohar Malgonkar*
Banyan Tree, The: *Hugh Tinker*
Beast and Man: *Murry Midgley*
Beginning of the Beginning: *Bhagwan Sri Rajneesh*
Ben Hur: *Lewis Wallace*
Best and the Brightest, The: *David Halberstam*
Beyond the Horizon: *Eugene O'Neill*
Beyond Modernisation, Beyond Self: *Sisirkumar Ghose*
Bharat Bharati: *Maithili Saran Gupta*
Big Fisherman, The: *Lloyd Douglas*
Biographia Literaria: *Samuel Taylor Coleridge*
Blind Ambitions: *John Dean*
Bliss was it in that Dawn: *Minoo Masani*
Born Free: *Joy Adamson*
Bread, Beauty and Revolution: *Khwaja Ahmad Abbas*
Breakthrough: *Gen. Moshe Dayan*
Bride's Book of Beauty, The: *Mulk Raj Anand*
Brothers Karamazov: *Feodor Dostoyevsky*
Bubble, The: *Mulk Raj Anand*
Butterfield 8: *John O' Hara*
By Love Possessed: *James Gould Cozzens*
Byzantium: *W.B. Yeats*

C

Caeser and Cleopatra: *George Bernard Shaw*
Cancer Ward, The: *Alexander Solzhenitsyn*
Candida: *George Bernard Shaw*
Candide: *Voltaire*
Canterbury Tales, The: *Geoffrey Chaucer*
Cardinal, The: *Henry Morton Robinson*
Castle, The: *Franz Kafka*
Catcher in the Rye: *J.D. Salinger*
Centennial: *James A. Michener*
Chandalika: *Rabindra Nath Tagore*
Chemmeen: *Thakazhi Sivasankara Pillai*
Cherry Orchard: *Anton Chekov*
Chesapeake: *James A. Michener*
Chidambara: *Sumitranandan Pant*
Childe Harold's Pilgrimage: *Lord Byron*
Children of Gebalawi: *Naguib Mahfpuz*
China's Watergate: *Leo Goodstadt*
Chinese Betrayal: *B.N. Malik*
Chitra: *Rabindra Nath Tagore*
Chithirappaavai: *P.V. Akilandam*
Choma's Drum: *K. Shivaram Karanth*
Chronicle of a Death Foretold: *Gabriel Garcia Marquez*
Class, The: *Erich Segal*
Climate of Treason: *Andrew Boyle*
Clockwork Orange: *Anthony Burgess*
Clown, The: *Heinrich Boll*
Colonel Sun: *Kingsley Amis*
Comedy of Errors: *William Shakespeare*
Common Sense: *Thomas Paine*

Rs. 150 Million for A Memoir

Bantam Books in 1991 agreed to pay six million dollars (approx. Rs. 150 million) for the world rights to the memoirs of Gulf war hero General H. Norman Schwarzkopf.

As with most American heroes, Gen Schwarzkopf will not be writing it all himself. He will have a collaborator.

To break even, the Schwarzkopf book will have to sell at least 450,000 copies in hardback and 1.5 million copies in paperback.

Bantam was chosen by Gen Schwarzkopf for his memoris because they offered more than other publishers did. Macmillan bid 1.2 million dollars, Viking Penguin 3.2 million, and Random House 5 million. Simon and Schuster, which has lost heavily on the Reagan memoirs, did not bid at all. It did not want to take any more risks with big names. Simon and Schuster had paid Reagan seven million dollars. (Rs. 175m.).

Communist Manifesto: *Karl Marx*
Confessions: *Jean Jacques Rousseau*
Confessions of a Lover: *Mulk Raj Anand*
Confessions of an Opium Eater, The: *Thomas Dequincey*
Confidential Clerk: *T.S. Eliot*
Conquest of Self: *Mahatama Gandhi*
Continent of Circe: *Nirad C. Choudhuri*
Coolie: *Mulk Raj Anand*
Count of Monte Cristo: *Alexander Dumas*
Coup, The: *John Updike*
Court Dancer, The: *Rabindra Nath Tagore*
Coverly Papers: *Joseph Addison*
Creation: *Gore Vidal*
Crescent Moon: *Rabindra Nath Tagore*
Crime and Punishment: *Feodor Dostoyevsky*
Crisis into Chaos: *E.M.S. Namboodiripad*
Cry My Beloved Country: *Alan Paton*
Culture in the Vanity Bag: *Nirad C. Choudhuri*
Curtain Raisers: *K. Natwar Singh*

D

Dark Crusader, The: *Alistair Maclean*
Darkness at Noon: *Arthur Koestler*
Dark Room, The: *R.K. Narayan*
Das Kapital: *Karl Marx*
David Copperfield: *Charles Dickens*
Dean's December, The: *Saul Bellow*
Death of a City: *Amrita Pritam*
Death of a Patriot: *R.E. Harrington*
Death in Venice: *Thomas Mann*
Debacle: *Emile Zola*
Decameron: *Giovanni Boccaccio*
Decline and Fall of the Roman Empire: *Edward Gibbon*
Descent of Man: *Charles Darwin*
Deserted Village: *Oliver Goldsmith*
Devdas: *Sharat Chandra Chatterjee*
Dilemma of Our Time: *Harold Joseph Laski*
Diplomacy in Peace and War: *T.N. Kaul*
Discovery of India: *Jawaharlal Nehru*
Distant Drums: *Manohar Malgonkar*
Divine Comedy: *Alighieri Dante*
Divine Life: *Swami Sivananda*
Doctor Zhivago: *Boris Pasternak*
Doctor's Dilemma: *George Bernard Shaw*
Dr. Jekyll and Mr. Hyde: *Robert Louis Stevenson*
Don Juan: *Lord Byron*
Don Quixote: *Miguel de Cervantes*
Durgesh Nandini: *Bankim Chandra Chatterjee*
Dynamics of Social Change: *Chandra Shekhar*

E

Earth: *Emile Zola*
Economics of the Third World: *S.K. Ray*
Education of Public Man, The: *Hubert Humphrey*
Elegy written in a Country Churchyard: *Thomas Gray*
Emma: *Jane Austen*
End of a Beautiful Era, The: *Joseph Brodsky*
Ends and Means: *Aldous Huxley*
Envoy to Nehru: *Escott Reid*
Essays for Poor to the Rich: *John Kenneth Galbraith*
Essays of Elia: *Charles Lamb*
Essays on Gita: *Sri Aurobindo Ghosh*
Eternal Himalayas: *Major H.P.S. Ahluwalia*
Executioner's Song, The: *Norman Mailer*
Expanding Universe: *Arthur Stanley Eddington*
Eye of the Storm, The: *Patrick White*

F

Face to Face: *Lasse & Mrs. Lisa Berg*
Faces of Everest: *Major H.P.S. Ahluwalia*
Facial Justice: *L.P. Hartley*
Family Reunion: *T.S. Eliot*
Far from the Madding Crowd: *Thomas Hardy*
Far Pavilions, The: *M.M. Kaye*
Faraway Music, The: *Svetlana Allilueva*
Farewell the Trumpets: *James Morris*
Farewell to Arms: *Ernest Hemingway*
Farm House: *George Orwell*
Father and Sons: *Ivan Turgenev*
Faust: *J.W. Von Goethe*
Fifth Horseman, The: *Larry Collins & Dominique Lapierre*
Final Days, The: *Bob Woodward & Carl Bernstein*
Finding a Voice–Asian Women in Britian: *Amrit Wilson*
Fire Next Time, The: *James Baldwin*
First Circle: *Alexander Solzhenitsyn*
First Blood: *David Marrel*
Fixer: *Bernard Malamud*
Flames from the Ashes: *P.D. Tandon*
Flounder, The: *Gunter Grass*
Food, Nutrition and Poverty in India: *V.K.R.V. Rao*
For Whom the Bell Tolls: *Ernest Hemingway*
Forbidden Sea, The: *Tara Ali Baig*
Forsyth Saga: *John Glasworthy*
Fortynine Days: *Amrita Pritam*
Freedom at MidNnight: *Larry Collins & Dominique Lapierre*
French Revolution: *Thomas Carlyle*
Friends and Foes: *Sheikh Mujibur Rahman*

G

Ganadevata: *Tara Shankar Bandopadhyaya*
Gandhi and Stalin: *Louis Fisher*
Gardener: *Rabindra Nath Tagore*
Gathering Storm: *Winston Churchill*
Ghasiram Kotwal: *Vijay Tendulkar*
Gitanjali: *Rabindra Nath Tagore*
Glimpses of World History: *Jawaharlal Nehru*
Godan: *Prem Chand*
Godfather, The: *Mario Puzo*
Golden Gate, The: *Vikam Seth*
Golden Threshold: *Sarojini Naidu*
Gone with the Wind: *Margaret Mitchell*

Good Earth: *Pearl S. Buck*
Grammar of Politics: *Harold Joseph Laski*
Grapes and the Wind, The: *Pablo Neruda*
Grapes of Wrath, The: *John Steinbeck*
Great Challenge, The: *Louis Fischer*
Great Expectations: *Charles Dickens*
Great Gatsby: *F. Scott Fitzgerald*
Great Tragedy: *Z.A. Bhutto*
Guide: *R.K. Narayan*
Gulag Archipelago: *Alexander Solzhenitsyn*
Gulliver's Travels: *Jonathan Swift*

H

Hamlet: *William Shakespeare*
Happy Valley: *Patrick White*
Heat and Dust: *Ruth Prawer Jhabwala*
Heir Apparent: *Dr. Karan Singh*
Heritage: *Anthony West*
Heroes and Hero Worship: *Thomas Carlyle*
Himalayan Blunder: *Brigadier J.P. Dalvi*
Hindu View of Life: *Dr. S. Radhakrishnan*
Hinduism: *Nirad C. Choudhuri*
House Divided, A: *Pearl S. Buck*
Human Factor: *Graham Greene*
Humboldt Gift, The: *Saul Bellow*
Hunchback of Notre Dame: *Victor Hugo*
Hungry Stones: *Rabindra Nath Tagore*

I

I follow the Mahatma: *K.M. Munshi*
Idiot, The: *Feodor Dostoyevsky*
Idols: *Sunil Gavaskar*
If I am Assassinated: *Z.A. Bhutto*
Importance of Being Earnest, The: *Oscar Wilde*
In Evil Hour: *Gabriel Garcia Marques*
In Memoriam: *Alfred Lord Tennyson*
In Search of Gandhi: *Richard Attenborough*
In Search of Identity: *Anwar el-Sadat*
India, The Critical Years: *Kuldip Nayar*
India Changes: *Taya Zinkin*
India Discovered: *John Keay*
India Divided: *Rajendra Prasad*
India of Our Dreams: *M.V. Kamath*
India Remembered: *Percival & Margaret Spear*
India Wins Freedom: *Abdul Kalam Azad*
Indian Philosophy: *Dr. S. Radhakrishanan*
India's Priceless Heritage: *N.A. Palkhivala*
Indira Gandhi's Emergence and Style: *Nayantara Sehgal*
Interpreters, The: *Wole Soyinka*
Inside Asia, Inside Europe, Inside Africa, etc.: *John Gunther*
Intimacy: *Jean Paul Sartre*
Invisible Man: *H.G. Wells*
Isabella: *John Keats*
Islamic Bomb: *Stev Weissman & Herbert Krouney*
Island in the Streams: *Ernest Hemingway*
Is Paris Burning? *Larry Collins & Dominique Lapierre*
Ivanhoe: *Sir Walter Scott*

J

Jai Somnath: *K.M. Munshi*
Jane Eyre: *Charlotte Bronte*
Jean Christophe: *Romain Rolland*
Jobs for the Millions: *V.V. Giri*
Joke, The: *Milan Kundera*
Julius Caesar: *William Shakespeare*
Jungle Book: *Rudyard Kipling*

K

Kayar: *Thakazhi Sivasankara Pillai*
Kagaz Te Kanwas: *Amrita Pritam*
Kamayani: *Jai Shankar Prasad*
Kamasutra: *Vatsyayana*
Kanthapura: *Raja Rao*
Kapala Kundala: *Bankim Chandra Chatterjee*
Keeper of the Keys, The: *Milan Kundera*
Kenilworth: *Sir Walter Scott*
Kidnapped: *Robert Louis Stevenson*
Kim: *Rudyard Kipling*
King of Dark Chamber: *Rabindra Nath Tagore*
King Lear: *William Shakespeare*
Kitni Nawon Kitni Bar – *S.H. Vatsyayan*
Kubla Khan: *Samuel Taylor Coleridge*

L

Lady Chatterley's Lover: *D.H. Lawrence*
La Peste: *Albert Camus*
Last Days of Pompeii: *Edward George Lytton*
Laws Versus Justice: *V.R. Krishna Iyer*
Last Maharaja, The: *Jean Louis Nou & Jacques Pouchepadass*
Last Things: *C.P. Snow*
Lead Kindly Light: *Vincent Shean*
Leaders: *Richard Nixon*
Leaves of Grass: *Walt Whitman*
Le Contract (Social Contract): *J.J. Rousseau*
Les Miserables: *Victor Hugo*
Letters From the Field: *Margaret Mead*
Leviathan: *Thomas Hobbes*
Life Divine: *Sri Aurobindo*
Life is Elsewhere: *Milan Kundera*
Life of Samuel Johnson: *James Boswell*
Lolita: *Vladimir Nabakov*
Loneliness of the Long Distance Runner: *Allan Sillitoe*
Long Day's Journey into Night: *Eugene O'Neill*
Lost Honour: *John Dean*
Love Story: *Erich Segal*

M

Macbeth: *William Shakespeare*
Magic Mountain: *Thomas Mann*
Mahatma Gandhi: *Romain Rolland*
Main Street: *Sinclair Lewis*
Major Barbara: *George Bernard Shaw*
Making of a Midsummer Night's Dream, The: *David Selbourne*
Man, Beast and Virtue: *Luigi Pirandello*
Mandarin, The: *Simon de Beauvoir*
Man of Property: *John Galsworthy*
Man and Superman: *George Bernard Shaw*
Man-eaters of Kumaon: *Jim Corbett*

Man of Destiny: *George Bernard Shaw*
Mankind and Mother Earth: *Arnold Toynbee*
Many Worlds: *K. P. S. Menon*
Marriage and Morals: *Bertrand Russel*
Masters, The: *C. P. Snow*
Maurice: *E. M. Forster*
Mayor of Casterbridge: *Thomas Hardy*
Mein Kampf: *Adolf Hitler*
Memories of Hope: *Gen. Charles de Gaulle*
Men Who Killed Gandhi, The: *Manohar Malgonkar*
Merchant of Venice, The: *William Shakespeare*
Middle Ground, The: *Margaret Drabble*
Middle March: *George Eliot*
Midnight's Children: *Salman Rushdie*
Mill on the Floss: *George Eliot*
Miser, The: *Moliere*
Moby Dick: *Hermann Melville*
Moon and Sixpence, The: *W. Somerset Maugham*
Mother: *Maxim Gorky*
Mother India: *Katherine Mayo*
Much Ado About Nothing: *William Shakespeare*
Murder in the Cathedral: *T. S. Eliot*
My Days: *R. K. Narayan*
My India: *S. Nihal Singh*
My Life and Times: *V. V. Giri*
My Own Boswell: *M. Hidayatullah*
My Struggles: *E. K. Nayanar*
My Son's Father: *Dom Moraes*
My Truth: *Indira Gandhi*

N

Naked Face, The: *Sidney Sheldon*
Nana: *Emile Zola*
New Dimensions of India's Foreign Policy: *Atal Behari Vajpayee*
Nineteen Eighty Four: *George Orwell*
Nisheeth: *Uma Shankar Joshi*

O

O' Jerusalem: *Larry Collins & Dominique Lapierre*
Odakkuzhal: *G. Shankara Kurup*
Of Human Bondage: *W. Somerset Maugham*
Old Man and the Sea, The: *Ernest Hemingway*
Oliver Twist: *Charles Dickens*
Oliver's Story: *Erich Segal*
One day in the Life of Ivan Denisovich: *Alexander Solzhenitsyn*
One Hundred Years of Solitude: *Gabriel Garcia Marquez*
One World: *Wendell Wilkie*
One World and India: *Arnold Toynbee*
One World to Share: *Shridhath Ramphal*
Origin of Species, The: *Charles Darwin*
Oru Desathinte Katha: *S. K. Pottekkatt*
Othello: *William Shakespeare*
Other Side of Midnight, The: *Sidney Sheldon*
Our Films Their Films: *Satyajit Ray*

P

Painted Veil, The: *W. Somerset Maugham*
Painter of Signs: *R. K. Narayan*
Pakistan Cut to Size: *D. R. Mankekar*
Pakistan: The Gathering Storm: *Benazir Bhutto*
Panchatantra: *Vishnu Sharma*
Paradise Lost: *John Milton*
Pather Panchali: *Bibhuti Bhushan*
Peter Pan: *J. M. Barrie*
Pickwick Papers, The: *Charles Dickens*
Pilgrim's Progress, The: *John Bunyan*
Portrait of India: *Ved Mehta*
Post Office: *Rabindra Nath Tagore*
Power and the Glory, The: *Graham Greene*
Power That Be, The: *David Halberstam*
Prathama Pratishruti: *Ashapurna Devi*
Prelude: *William Wordsworth*
Price of Power: Kissinger in the Nixon White House: *Seymour M. Hersh*
Pride and Prejudice: *Jane Austen*
Prince: *Niccolo Machiavelli*
Principia Mathematica: *Bertrand Russell*
Prison Diary: *Jayaprakash Narayan*
The Prisoner of Zenda: *Anthony Hope*
Promises to Keep: *Chester Bowles*
Pygmalion: *George Bernard Shaw*

R

Rabbit,Run: *John Updike*
R Document, The: *Irving Wallace*
Rage of Angels: *Sidney Sheldon*
Ragtime: *E. L. Doctorow*
Rain King, The: *Saul Bellow*
Rangbhoomi: *Prem Chand*
Rape of Bangladesh: *Anthony Mascarenhas*
Rape of the Lock, The: *Alexander Pope*
Rebel, The: *Albert Camus*
Rebirth: *Leonid Brezhnev*
Red and Black, The: *Stendhal*
Red Badge of Courage: *Stephen Crane*
Red Star Over China: *Edgar Snow*
Reflections on the French Revolution: *Edmund Burke*
Rendezvous with Rama: *Arthur C. Clark*
Return of the Native, The: *Thomas Hardy*
Riding the Storm: *Harold MacMillan*
Rights of Man, The: *Thomas Paine*
Robe, The: *Lloyd C. Douglas*
Robinson Crusoe: *Daniel Defoe*
Romeo and Juliet: *William Shakespeare*
Room at the Top: *John Braine* Roots, The: *Alex Haley*
Rubaiyat-i Omar Khayyam: *Edward Fitzgerald*

S

Saket: *Maithili Sharan Gupta*
Sanctuary: *William Faulkner*
Satanic Verses, The: *Salman Rushdie*
Scarlet Letter: *Nathaniel Hawthorne*
Second World War, The: *Winston Churchill*
Seven Lamps of Architecture: *John Ruskin*
Seven Summers: *Mulk Raj Anand*
Shadow from Ladakh: *Bhabani Bhattacharya*
Shape of Things to Come: *H. G. Wells*

She Stoops to Conquer: *Oliver Goldsmith*
Ship of Fools: *Katherine Anne Porter*
Siddharta: *Hermann Hess*
Slaughter House Five: *Kurt Vanuegut*
Shoes of the Fisherman, The: *Morris L. West*
Six Characters in Search of an Author: *Lugi Pirandello*
Small Land: *Leonid Brezhnev*
Snow Country: *Yasunari Kawabata*
Social Contract, The: *Rousseau*
Sohrab and Rustam: *Mathew Arnold*
Songs of India, The: *Sarojini Naidu*
Sons and Lovers: *D. H. Lawrence*
Sound and the Fury, The: *William Faulkner*
Spirit of the Age, The: *William Hazlitt*
Stopping By Woods: *Robert Frost*
Story of a Real Man: *Nikolayev Polevoi*
Story of My Experiments with Truth, The: *Mahatma Gandhi*
Story of My Life: *Moshe Dayan*
Strangers and Brothers: *C. P. Snow*
Strife: *John Galsworthy*
Struggle in My Life, The: *Nelson Mandela*
Sunny Days: *Sunil Gavaskar*
Sun Stone: *Octavio Paz*
Swami and Friends: *R. K. Narayan*
Sword and the Sickle, The: *Mulk Raj Anand*

T

Talisman: *Sir Walter Scott*
Tarzan of the Apes: *Edgar Rice Burroughs*
Tempest: *William Shakespeare*
Thank You, Jeeves: *P. G. Wodehouse*
Thirteenth Sun, The: *Amrita Pritam*
Thorn Birds: *Colleen McCullough*
Thousand Cranes: *Yasunari Kawabata*
Through the Indian Looking Glass: *David Selbourne*
Thus Spake Zarathustra: *Friedrich Wihelm Nietzsche*
Time Machine: *H.G. Wells*
Tin Drum: *Gunther Grass*
Tinker, Tailor Soldier: *John Le-Carre*
Tom Jones: *Henry Fielding*
Treasure Island: *Robert Louis Stevenson*
Tree of Man, The: *Patrick White*
Trial, The: *Franz Kafka*
Trinity: *Leon Uris*
Tropic of Cancer: *Henry Miller*
Tryst with Destiny: *S. Gopalan*
Twelfth Night: *William Shakespeare*
Two Leaves and a Bud: *Mulk Raj Anand*

U

Ulysses: *James Joyce*
Uncle Tom's Cabin: *Harriet Beecher Stowe*
Unto The Last: *John Ruskin*
Untold Story: *General B.M. Kaul*
Utopia: *Thomas More*

V

Valley of Dolls: *Jacqueline Susann*
Vanity Fair: *William Thackeray*
Vendor of Sweets, The: *R.K. Narayan*
Vicar of Wakefield, The: *Oliver Goldsmith*
Victim, The: *Saul Bellow*
Voice of Conscience: *V.V. Giri*

W

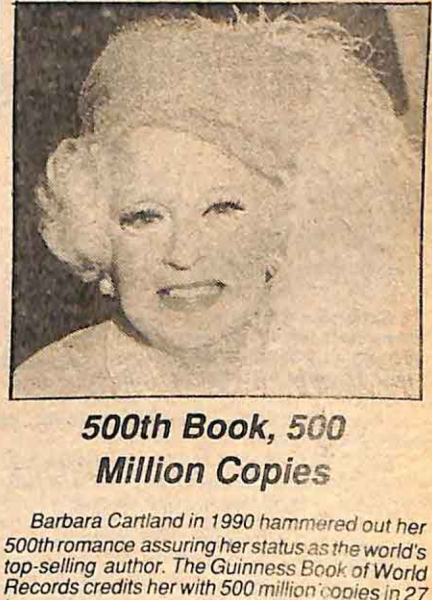
Waiting for Godot: *Samuel Becket*
Wake Up India: *Annie Besant*
War and Peace: *Leo Tolstoy*
Waste Land, The: *T.S. Eliot*
Way of all Flesh, The: *Samuel Butler*
Wealth of Nations, The: *Adam Smith*
We Indians: *Khushwant Singh*
Westward Ho: *Charles Kingsley*
Where the Grass is Greener: *David M. Smith*
White House Years: *Dr. Henry Kissinger*
Without Fear or Favour: *Harison E. Salisbury*
Witness to an Era: *Frank Moraes*
World According to Garp, The: *John Irving*
Wuthering Heights: *Emily Bronte*

Y

Yayati: *V.S. Khandekar*
Year of the Upheaval: *Henry Kissinger*
Yesterday and Today: *K.P.S. Menon*

Z

Zulfi, My friend: *Piloo Mody*



500th Book, 500 Million Copies

Barbara Cartland in 1990 hammered out her 500th romance assuring her status as the world's top-selling author. The Guinness Book of World Records credits her with 500 million copies in 27 languages.

Cartland, 90, celebrated this at a party in London that featured an all-pink menu, from the champagne to the dessert, to match her outfit. 'So many of my contemporaries are either dead or gaga,' she told The Times of London.

RECORDS

INDIA IN THE record book

India's international carrier, **Air India,** created world record in 1990 by evacuating more than 50,000 persons in five weeks time. Termed as the biggest ever airlift conducted in the world, AI created an air bridge between Jordan and India to evacuate 107,822 refugees from Kuwait via Amman and Dubai by a total of 419 flights.

Wing Commander M. Dutt, an IAF helicopter pilot, won a place in the record book in 1990 for the largest-ever high-altitude rescue operation by helicopter anywhere in the world. He did the feat from November 14-18, 1986 by flying a record number of 75 rescue sorties to save 145 people from the jaws of icy death.

Gul Mohammad of old Delhi entered the 1991 Guinness Book as the shortest man in the world. Gul, 33, is only 57.15 cm tall and weighs 17 kg.

Surendra Acharya won entry by painting 241 letters on a grain of rice. He used camel hair brush.

VRP Rahman, a ground engineer of the Air Force in Chandigarh won a place by his 20 days non-stop dancing.

Vanka Ravindra Kumar of Guntur won entry for a whistling marathon of 45 hours and 20 minutes.

Milind Deshmukh, a Pune, youth walked his way into the Guinness Book by covering 65 km, with a full milk bottle balanced on his head.

Capt. Nivedita Bhasin, 26, of Indian Airlines became the youngest pilot in civil aviation history to command a jet aircraft when she piloted IC-492 (Bombay-Aurangabad-Udaipur) on January 1, 1990.

. Here is a selection from the Guinness Book of Records having relevance to India:

Most Recordings: Miss Lata Mangeshkar (b. 1928) between 1948 and 1985 has reportedly recorded not less than 30,000 solo, duet and chorus backed songs in 20 Indian languages. She frequently had 5 sessions in a day and has backed more than 2000 films.

Human Computer: Mrs. Shakuntala Devi demonstrated the multiplication of two 13-digit numbers 7,686,369,774,870×2,465,099,745,779 picked at random by the Computer Department of Imperial College, London, on 18 June 1980, in 28 sec. Her correct answer was 18,947,668,177,995,426,462,773,730.

Longest Finger Nails: Shridhal Chillal, (b. 1937) of Poona. The aggregate measurement, by March 25, 1990 was 173 in or 439.42 cm. for the 5 nails on his left hand (thumb 40 in or 101.6 cm). He last cut his nails in 1952.

Longest Hair: Swami Pandarasannadhi, the head of the Tirudadutural monastery, Tanjore district, Madras, was reported in 1949 to have hair 26 ft. (7.92 m) in length.

Strongest hair: Galhinder Kaur of Leicester, England, is the human with the strongest hair. The 11-year-old Kaur's single strand of hair took the strain of 25 gms.

Longest Moustache: Masuriya Din (b. 1908), a Brahmin of the Partabgarh District in Uttar Pradesh. His moustache grew to an extended span of 8 ft 6 in (259 cm) between 1949 and 1962.

Operations (Most): Padmabhushan Dr. M. C. Modi, a pioneer of mass eye surgery in India since 1943, has performed 833 cataract operations in a single working day and a total of 595,019 till Jan. 1987.

Standing: The longest period on record that anyone has continuously stood is for more than 17 years in the case of Swami Maujgiri Maharaj when performing the Tapasya or penance from 1955 to 1973 in Shahjahanpur, Uttar Pradesh. When sleeping, he would lean against a plank. He died aged 85 in Sept. 1980.

Most Ingenious painter: Surendra Acharya of Jaipur painted the largest number of letters (241) on a grain of rice. He used a camel-hair brush.

Crawling: Over a space of 15 months ending on March 9 1985, Jagdish Chander, 32, crawled 1,400 km (870 miles) from Aligarh to Jamma, to propitiate his favourite Hindu goddess, Mata.

Singing (Solo): 262 hrs. by pastor S. Jayaseelan at the Asian Glass House Building, Rammad, from April 22 - May 3, 1989.

Whistling: Vanka Ravindra Kumar of Guntur, Andhra Pradesh whistled for 45 hrs 20 min from 10 - 12 March 1990.

Crowds (Largest): The greatest recorded number of human beings assembled with a common purpose was an estimated 15 million at the Hindu festival of Kumbh-Mela, which was held at *the confluence of the Yamuna (formerly called the Jumna), the Ganges and the invisible 'Saraswati' at Allahabad, Uttar Pradesh, on Feb 6, 1989.*

Largest Funeral: *The funeral of the charismatic C. N. Annadurai (died 3 Feb. 1969) T. Nadu Chief Minister was, according to a police estimate attended by 15 million.*

Quintuplets (Heaviest): *25 lb to Mrs. Kamalammal, Pondicherry, Dec. 30, 1956.*

Highest and Lowest Amphibian: *The greatest altitude at which an amphibian has been found is 8000 m (26,246 ft) in the Himalayas for a common toad (Bufo vulgaris). This species has also been found at a depth of 340 m (1,115 ft) in a coal mine.*

Abhishek Jain Worlds Junior Typing Champion

Tree with Largest Canopy: *The tree canopy covering the greatest area is the great banyan Ficus benghalensis in the Indian Botanical Garden, Calcutta with 1,775 prop or supporting roots and a circumference of 412 m (1,350 ft). It covers overall some 1.2 ha (3 acres) and dates from before 1787.*

It is reported that a 550. year old Banyan tree (known as 'Thimmamma Marriamanu') in Gutibayalu village near Kadiri taluk. Andhra Pradesh spreads over 2.1 ha (5.2 acres).

Tallest and Fastest-Growing Bamboo: *The tallest recorded bamboo was a thorny bamboo culm (Bambusa arundinacea) felled at Pattazhi, Travancore, in November 1904, which me-asured 37 m (121½ ft).*

Largest Delta: *The largest delta is that created by the Ganga (Ganges) and Brahmaputra in Bangladesh and West Bengal. It covers an area of 75000 sq km (30,000 sq miles).*

Greatest Rainfall: *930 cm (366.14 in.) Cherrapunji, Meghalaya, (July 1861)—12 months: 2646 cm (1,041.78 in.) Cherrapunji, Meghalaya (Aug. 1, 1860—July 31, 1861).*

Longest Palindromic Words: *The longest in the English language is 'redivider' (9 letters). The 9-letter word, 'Malayalam', is a proper noun given to the language of the Malayali people in Kerala.*

Highest Filling Station: *The highest petrol filling station in the world is at Leh, Ladakh, India at 3658 m (12,000 ft) operated by Indian Oil.*

Busiest Bridge: *The world's busiest bridge is the Howrah Bridge across the River Hooghly in Calcutta. In addition to 57,000 vehicles a day it carries an incalculable number of pedestrians across its 457 m (1,500-ft)-long 22 m (72-ft)-wide span.*

Highest Bridges: *The highest road bridge is at an altitude of 5600 m (18,380 ft) near Khardungla, Ladakh, built by the Indian army in Aug. 1982. This Bailey Bridge is only 30 m (98.4 ft) long.*

Largest Kitchen: *The largest kitchen ever set up has been the Indian Government field kitchen set up in April 1973 at Ahmadnagar, Maharashtra, in the famine area. The kitchen daily provided 1.2 million subsistence meals.*

Largest Employer: *The world's largest employer is Indian Railways with 1624121 staff in 1988-89.*

Longest typewriting *(Manual machine): 123 hrs by Shambhoo Govind Anbhawane of Bombay 18-23 August 1986 on a Godrej Prima manual machine, aggregating 806,000 strokes.*

Speediest: *Abhishek Jain from Atta, Jalandar, won World Typing Champianship for Juniors at Brussels in 1991 (110 words/minute).*

Largest Bank: *The bank with the most branches is the State Bank of India which had 12203 branches on January 1, 1990 with assets of £26.4 billion. (Rs. 1188 billion).*

Silver: *The largest single pieces of silver are the pair of water jugs of 10,408 troy oz (867.3 troy lb or 323..5 kg)made in 1902 for the Maharajah of Jaipur (1861-1922). They are 5 ft 3 in (160 cm) tall with a circumference of 8 ft 1½ in (247.7 cm) and have a capacity of 1,800 Imperial gallons (8178 lit. or 2.162 US gallons). They are now in the City Palace., Jaipur. The silversmith was Gobind Narain.*

Milk Yields: *A 15-year-old goat owned by Mrs. Nanbui Meghani of Bhuj, Gujarat, was reported in November 1984 to have lactated continuously for 12 years.*

Marriage Ages: *The country with the lowest average age for marriage is India, with 20.0 years for males and 14.5 for females.*

Terrorism: *Air India Boeing 747 'Kanishka, crashed into Atlantic south of Ireland, killing 329 on June 23, '85. A bomb placed aboard by Sikh extremist is the suspected cause.*

Lowest Murder Rates: *In the state of Sikkim, in the Himalayas, murder is practically unknown, while in Hunza area of Kashmir, in the Karakoram, only one definite case by a Hunzarwal has been re-*

corded since 1900.

Largest School: South Point High School, Calcutta, had an enrollment of 12,350 regular students in 1983-84.

Minarets and Pagodas: The tallest free-standing stone tower is the Qutab Minar, south of New Delhi, built in 1194 to a height of 72.5 m (238 ft.)

Worst Disasters: Dam Burst: Manchu River Dam, Morvi, Gujarat, killing about 5,000 on August 11, 1979.

Industrial: Bhopal, at Union Carbide plant killing about 2500 plus 200,000 injured on Dec. 2-3, 1984.

Railroad: Bagmati River, Bihar killing about 800 on June 6, 1981.

Man-Eating Animal: Champawat district, tigress shot by Col. Jim Corbett. Killing 436 in 1907.

Hail: Moradabad, Uttar Pradesh, killing 246 on April 20, 1888.

Balancing on one foot: The longest recorded duration for balancing on one foot is 34 hours by N. Ravi in SathhAmangalam City, Tamil Nadu, April 17-18, 1982. The disengaged foot may not be rested on the standing foot nor any sticks be used for support or balance, but 5-minute rest breaks are allowed after each hour.

Clapping: The duration record for continuous clapping (sustaining an average 160 claps per min. audible at 120 yds) is 58 hrs; 9 min by V. Jayaraman of Tamil Nadu on February 12-15, 1988.

Running Backwards: Arvind Pandya ran Los Angels—New York in 107 days, Aug. 18—Dec. 3, 1984.

Talking: Record for non-stop talking is 360 hours by S. E. Jayaraman of Cuddalore from 11 a.m. June 8, 1989. He continued for 15 days, taking a respite of 15 min every three hours.

Religion: Longest Service: Rev. K. M. Jacob (b 10 July 1880) was made a deacon in the Mar Thoma Syrian Church of Malabar in Kerala, Southern India in 1897. He served his church until his death on 18th March 1984, 87 years later.

Longest Canoe: The world's longest canoe is the 35.7 m or 117 ft long 20.3 tonnes/20 ton Kauri Wood Maori war canoe Nga Toki Mata Whaorua, built by adzes at Kovikeri Inlet, New Zealand in 1940 for a crew of 70 or more. The 'Snake Boat' Nadubhagom, 41.1 m or 135 ft long of Kerala has a crew of 109 rowers and 9 encouragers.

Longest Railway Platform: Kharagpur platform, West Bengal which measures 833 m or 2733 ft in length.

Greatest ranges: The world's greatest land mountain range is the Himalaya-Karakoram, which contains 96 of the world's 109 peaks of over 7315 m (24,000 ft).

Gratest rainfall: For a calendar month, the record is 9300 mm (366.14 in) at Cherrapunji, Meghalaya, in July 1861 and the 12 month record was also at Cherrapunji with 26461 mm (1041.78 in) between Aug. 1, 1860 and July 31, 1861.

Largest Star Ruby: 2475 carats, Rajarathna, displays an animated star of 6 lines and is cut as a cabochon.

Largest Double Star Ruby: 1370 carats. A cabochon art gem, Neelanjahl owned by G. Vidyaraj, Bangalore, displays 12 star lines and measures 7.62 cm (3 in) height and 5.08 cm (2 in) diameter.

Largest Election: Those which began on Nov. 22, 1989 for the Lok Sabha, which has 543 elective seats. 304126600 people out of an electrorate of 498647786 cast their votes. 291 parties contested the elections, and there were more than 593,000 polling stations manned by $3^{1/2}$ million staff.

Largest ballot paper: On March 5, 1985 in the State Asembly (Vidhan Sabha) elections in Karnataka, there were 301 candidates for Belgaum city.

Most protracted litigation: The longest contested law suit ever recorded ended in Poona on 28 April 1966, when Balasaheb Patloji Thorat received a favourable judgement on a suit field by his ancestor Maboji Thorat 761 years earlier in 1205.

Most prolific murderer: It was established at the trial of Behram, the Indian thug, that he had strangled atleast 931 victims with his yellow and white cloth strip or ruhmal in the Oudh district between 1790 and 1840.

Greatest damages (Personal injury) The compensation for the disaster in 1984 at the Union Carbide Corporation plant in Bhopal was agreed at $ 470 million. The Supreme Court passed the order for payment on Feb. 14, 1989 after the settlement between the Corporation and the Indian Government, which represented the interests of more than 500000 claimants.

Classical Concert attendance: An estimated 800,000 attended a free open-air concert by the New York Philharmonic conducted by Zubin Mehta, on the Great Lawn of Central Park, New York, on 5th July 1986, as part of the Statue of Liberty Weekend.

Biggest Bicycle Manufacturers: Hero cycles of Ludhiana, Punjab, founded in 1956 by the Munjal brothers. In 1989, they turned out 2936073 units.

Oldest Prime Minister: The oldest age of first appointment has been 81 by Morarji Ranchhodji Desai (b 29 Feb 1896) in March 1977. ●

THE SUPERLATIVES

The Superlatives are broadly classified into the Human World, the Natural World, the Scientific World and the World of Arts and Entertainment. Man's achievements on the Earth and in outer space are also highlighted.

Human World

Tallest Man recorded: Robert Pershing Wadlow (1918-40) born at Alton, Ilinois, USA: 272 cm. (8 ft 11.1 in)

Tallest Living Man: Haji Mohammad Alam Çhanna (b: 1953) of Bachal. Channa, Sehwan Sharif, Pakistan: 233.6 cm. (7 ft 8 in.).

Tallest Woman recorded: Zeng Jinlian (pronounced San Chung Lin) (1964-82) of China, 248.3 cm (8 ft $1^{3}/_{4}$ in).

Tallest Living Woman: Sandy Allen of Canada: (b: 1955). 231.8 cm (7 ft $7^{1}/_{4}$ in). She now weighs 210 kg (462 lb).

Heaviest Man: Jon Brower Minnoch (1941-83), Washington, USA. He weighed 635 kg (1400 lb).

Heaviest Woman: Percy Pearl of Washington, USA (1926-72), 399 kg (880 lb).

Oldest Man ever lived (Authenticated): Shigechiyo Izumi, Japan (1865-1986). Born on June 29, 1865, he was recorded as a 6-year-old in Japan's first census of 1871. He died at the age of 120 yrs. 237 days.

Most Children: The greatest officially recorded number of children produced by a mother is 69 by the first of the two wives of Feodor Vassilyev of USSR. In 27 confinements she gave birth to 16 pairs of twins, 7 sets of triplets and 4 sets of quadruplets.

Most Prolific Mother (living): Leontina Albina (b. 1925), Chile, who before May 1988 produced 55 children.

First Siamese Twins: Chang and Eng Bunker (known in Thailand as Chan and In) born at Meklong on May 11, 1811 of Chinese parents. They died within three hours of each other on Jan. 17, 1874, aged 62.

First Test Tube Baby: Louise Brown (5 lb 12 oz) (2.6 kg) was delivered by caesarian section from Lesley Brown, 31, in Oldham General Hospital, Lancashire, England at 11.47 p.m. on July 25, 1978.

First Human Heart Transplant: was performed on Louis Washkansky, 55, at the Groote Schuur Hospital, Cape Town, S. Africa, on Dec. 3, 1967 by a team of 30 led by Prof. Christiaan Neethling Barnard. The donor was Miss Denise Ann Darvall, aged 25. Washkansky died on Dec. 21, 1967.

First Artificial Heart: Dr. Barney B. Clark, 61, Des Moines, Iowa received the first artificial heart Dec 1-2, 1982 at the Utah Medical Centre, Salt La City, Utah. The Surgeon was Dr. William C De Vrie The heart was a Jarvik Mark 7 designed by Robert Jarvik. Dr. Clark died on March 23, 1983, 112 days later.

Natural World

Largest and Heaviest Animal: The Blue or Su phur-bottom Whale. The largest specimen ev recorded was a female landed at Falkland Island in 1909. She measured 33.58 m (110 ft 2.5 in) length. Another female measuring 27.6 m (90 ft 6 i was caught in the South Atlantic Ocean by the Sovi "Slava' whaling fleet on March 20, 1947. It weighe 209 tonnes.

Tallest Living Animal: The Giraffe, now four only in the dry savannah and semi-desert areas Africa. The tallest ever recorded was a Masai bu named "George' received at Chester Zoo, Englan on Jan. 8, 1959, from Kenya. His horns almo touched the roof of the 20 ft (6.09 m) high Giraff House when he was 9 years old. George died o July 22, 1969.

Fastest Moving Animal: The Peregrine Falcor which has been timed electronically at 350 km/ (217 m/h) in 1963 in Germany while making a scoo at a 45° angle of descent. The fastest bird in leve flight is the red-breasted Merganser of US whic attained an air speed of 129 km/h (80 m/h) in 1960

Largest Living Land Animal: The African bus elephant. The average adult bull stands 10 ft 6 in (3. m) at the shoulder and weighs 6.5 tonnes. The larg est specimen ever recorded was a bull shot i Southern Angola on Nov. 7, 1974. It had a height 13 ft (3.96 m).

Fastest Land Animal over short distance [i. upto 600 yd (548.4 m)]: The Cheetah or Huntin Leopard of the plains of East Africa, Iran, Turkmeni and Afghanistan, with a probable maximum spee of 96-101 km/h (60-63 m/h) over suitably leve ground. Fastest land animal over a sustained dis tance [1,000 yd (914 m) or more]: The Pronghor Antelope of US, with a speed of 56 km/h (35 m/h) f 6.5 km (4 m), at 67 km/h (42 m/h) for 1.6 km (1 m) an 88.5 (km/h) (55 m/h) for 0.8 km (0.5 m).

Tallest Tree: The redwood species near th coast of California. The tallest living example is th "Tallest Tree" in Red Wood Creek Grove, Humbol County, California, discovered in 1963. It is 367.8 (112.1 m) tall and has a girth of 43 ft 11 in (13.38 m

Most Massive Tree: Giant Sequoia named the "General Sherman' standing 274.9 ft (83.84 m) tall in the Sequoia National Park, California. It has a girth of 82.3 ft (25.1 m) at 5 ft. above the ground. This tree has been estimated to contain the equivalent of 600, 120 board feet of timber.

Largest Forest: The vast coniferous forests of the northern USSR lying mainly between latitude 55° N, and the Arctic Circle. The total wooded area amounts to 2,700,000,000 acres or 1100 million ha (25 percent of the world's forests), of which 38 percent is Siberian larch.

Largest Park: The Wood Buffalo National Park in Alberta, Canada (established in 1922) has an area of 11,172,000 acres (17,560 sq miles or 45480 sq km).

Greatest Rainfall (24 hrs): 73.62 in or 1870 mm Cilaos La Reunion, Indian Ocean, March 15-16, 1952.

Maximum Sunshine: Annual average 97 percent (over 4300 hrs), eastern Sahara. Hottest place: (Annual mean): Dallol, Ethiopia: 94° F or 34.4°C (1960-66).

Longest Drought: c. 400 years to 1971. Desierto de Atacama, Chile.

Coldest Place: (Extrapolated Annual Mean): Polus Nedostupnosti, pole of Cold (78° S 96°E), Antarctica, –72°F or –57.8°C. Coldest measured mean: –70°F or –56.6°C. Plateau Station, Antarctica Wettest place (Annual Mean): Tutunendo, Colombia, average 463.4 in (11,770 mm).

Great Doubles: Three pairs of twins attending St. Martha's Primary School in Sydney.

Largest Ocean: the Pacific; representing 45.8 per cent the World's Oceans, it covers an area of 64,186,300 sq miles or 166,820,200 sq km.

Deepest part of Ocean: in the Marianas Trench in the Pacific Ocean; has a depth of 5960 fathoms (35,760 ft or 10,906 m) or 6.78 miles (10.91 km).

Largest sea: the South China Sea with an area of 1,148,500 sq miles or 2,974,600 sq km.

Longest Straits: the Tatarskiy Proliv or Tartar Straits between Sakhalin Island and the USSR mainland, running from the Sea of Japan to Sakhalinsky Zaliv. This distance is 800 km or 497 miles–thus marginally longer than the Malacca Straits.

Largest Gulf: the Gulf of Mexico, with an area of 580,000 sq miles or 1,500,000 sq km, and a shoreline of 3100 miles or 4990 km from Cape Sable, Florida, to Cabo Catoche, Mexico.

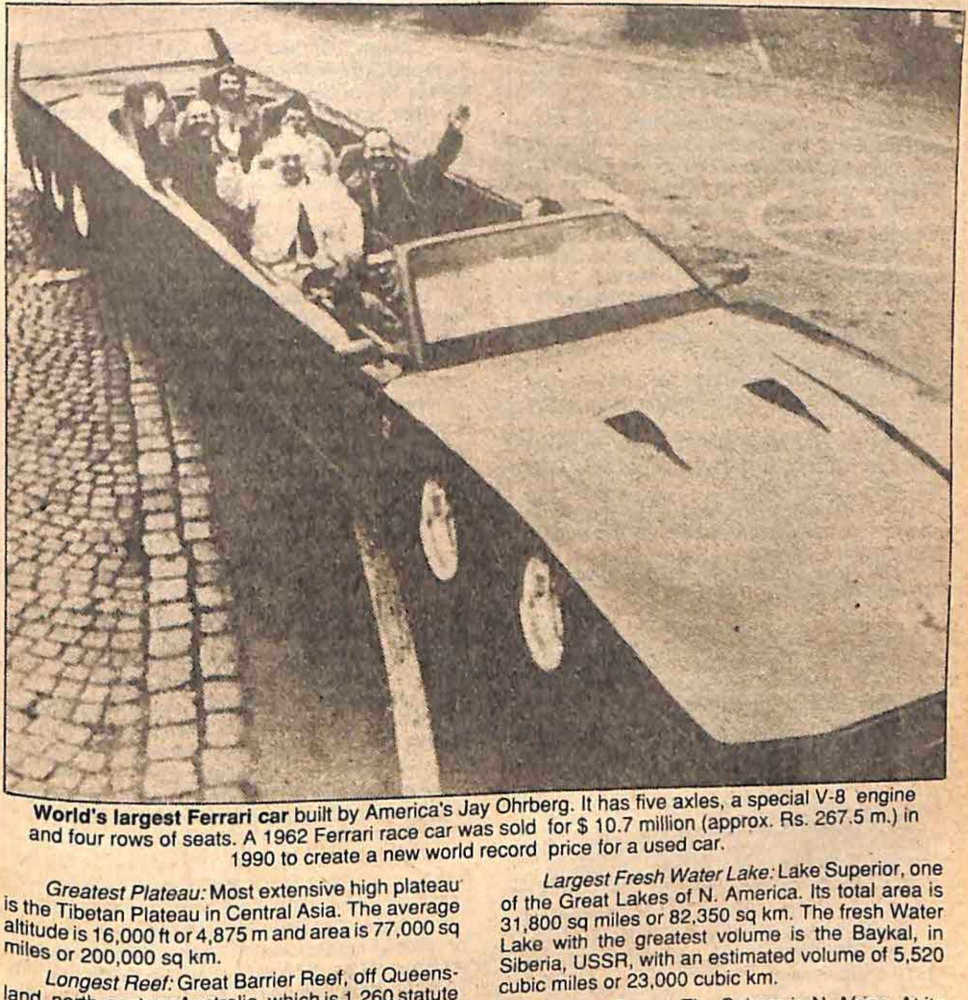
Largest Bay: measured by shoreline length is Hudson Bay, Northern Canada, with a shoreline of 7,623 miles or 12,268 km with an area of 317,500 sq miles or 822,300 sq km. The area of Bay of Bengal is however 839,000 sq miles or 2,172,00 sq km.

Largest Land Mass: The Eurasian land with an area (including Islands) of 20,733,000 sq miles or 53,698,000 sq km.

Smallest Land Mass: the Australian Mainland with an area of 2,941,526 sq miles or 7,618,493 sq km which, together with Tasmania, New Zealand, New Guinea and the Pacific Islands is sometimes described as Oceania.

Largest Peninsula: Arabia with an area of 1,250,000 sq miles or 3,250,000 sq km.

Largest Island: Discounting Australia, which is usually recorded as a continental land mass, the largest island is Greenland (Re-named Kalaallit Nunaat, May 1, 1979), with an area of about 840,000 sq miles or 2,175,000 sq km.



World's largest Ferrari car built by America's Jay Ohrberg. It has five axles, a special V-8 engine and four rows of seats. A 1962 Ferrari race car was sold for $ 10.7 million (approx. Rs. 267.5 m.) in 1990 to create a new world record price for a used car.

Greatest Plateau: Most extensive high plateau is the Tibetan Plateau in Central Asia. The average altitude is 16,000 ft or 4,875 m and area is 77,000 sq miles or 200,000 sq km.

Longest Reef: Great Barrier Reef, off Queensland, north-eastern Australia, which is 1,260 statute miles or 2027 km in length.

Greatest Archipelago: 3,500-mile or 5600-km long crescents of more than 13,000 islands which form Indonesia.

Highest Mountain Peak: The Eastern Himalayan peak Mount Everest 29,028 ft or 8848 m above sea level on the Tibet-Nepal border. The peak was named after Col. Sir George Everest (1790-1866), formerly Surveyor General of India.

Largest Lake (Inland Sea): the Kaspiskoye More (Caspian Sea) between Southern USSR and Iran. It is 760 miles or 1225 km long and its total area is 360,700 sq km or 139,000 sq miles.

Largest Fresh Water Lake: Lake Superior, one of the Great Lakes of N. America. Its total area is 31,800 sq miles or 82,350 sq km. The fresh Water Lake with the greatest volume is the Baykal, in Siberia, USSR, with an estimated volume of 5,520 cubic miles or 23,000 cubic km.

Largest Desert: The Sahara in N. Africa. At its greatest length it is 3200 miles or 5150 km from east to west. From North to South, it is between 800 and 1400 miles or 1275 and 2250 km. Area covered by the desert is about 3,250,000 sq miles or 8,400,000 sq km.

Highest Water Fall: Salto Angel Falls in Venezuela on a branch of the river Carrao. It has a total depth of 3,212 ft or 979 m.

Longest and Shortest Rivers: The two longest rivers are Amazon, flowing into the South Atlantic and the Nile, flowing into the Mediterranean. Which is longer is more a matter of definition than simple

Record Book In Russian

Thanks to glasnost (openness) the Russian edition of the Guinness Book of Records was published in Moscow on Feb. 20, 1990. The first print run was 100,000 copies.

As the second best-seller in the world—after the Bible—Guinnes Book carries 15,000 entries in the new edition. Of these the Soviet superlatives number only 247 belying both the size of the population (third largest in the world) and its surface area (the world's largest).

The Russian edition includes the following record-breaking Russians:

Albert Petrovsky, who in 1963 became the first person to juggle seven Indian clubs simultaneously.

The bacteria discovered still living in layers of salt in Irkustsic is believed to be more than 600 million years old.

The largest man-made reservoir is in Kakhovskaya in Central Russia holding 40,000 billion gallons of water.

The Russian edition is priced 20 roubles (approx. Rs. 660).

measurement. The Amazon has a length of 4007 miles or 6448 km. The length of the Nile is 4145 miles or 6670 km. However, the lengths of these rivers vary if measured along different courses.

The shortest named river is the Roe River in Montana, which flows into the Missouri River, and is 200.13 ft or 61 m long.

Scientific World

Largest Planet: Jupiter, with an equatorial diameter of 88,846 miles or 142,984 km and a polar diameter of 83,082 miles or 133,708 km is the largest of the 9 major planets, with a mass 317.83 times, and a volume 1,321.4 times that of the Earth.

Smallest Planet: Pluto with a diameter of about 3000 km or 1880 miles and mass about 1/500 of the Earth's is the smallest planet.

Fastest Planet: Mercury, which orbits the Sun at an average distance of 35,983,100 miles or 57,909,200 km, has a period of revolution of 87.9686 days, so giving the highest average speed in orbit of 107,030 mph or 172,248 km/h.

Earliest Spacecraft: Sputnik-1, owned by USSR, was the first artificial satellite successfully put into orbit on Oct. 4, 1957.

Earliest Manned Satellite: First successful manned space flight took off from USSR on April 12, 1961. Flight Major (later Col) Yuri Gagarin was the first cosmonaut.

Earliest Walk in Space: Lt. Col. Aleksey A. Leonov, USSR on March 18, 1965; Spacecraft — Voskhod 2.

Longest manned space flight: Col. Vladimir Titov and flight engineer Musa Manarov launched to the Mir Space Station aboard Soyuz TM4 on Dec. 21, 1987, landed in Soyuz TM6 (with French cosmonaut Jean-Loup Chretien), at a secondary recovery site near Dzhezkazgan, Kazakhstan, USSR, on Dec. 21 1988, after a spaceflight lasting 365 days 22 hr. 39 min. 47 sec.

Largest Space Object: The heaviest object orbited is the Apollo-XV, which weighed 154.88 tons.

Tallest Office Building: Sears Tower, the national headquarters of Sears, Roebuck & Co. in Chicago, USA with 110 storeys, rising to 1,454 ft or 443 metres. It surpassed World Trade Centre in New York City in height by 100 ft.

Tallest Tower: 'CN Tower' in Metro Centre, Toronto, Canada rises to 1822 ft 1 in or 555.33 metres. The tallest tower built before the era of television masts is the *Eiffel Tower* in Paris, France. Completed on March 31, 1889, it has a height of 320.75 metres or 1,052 ft 4 in.

Largest Stadium: Strahov in Praha (Prague), Czechoslovakia. Completed in 1934, it can accommodate 240,000 spectators.

Longest Bridge: The longest steel arch bridge in the world is New River Gorge Bridge in West Virginia, USA, completed in 1977 with a span of 1700 ft (518.2 metres).

Highest Dam: Will be the Rogunsky earthfill dam in the USSR which will have a final height of 1,098 ft or 335 m across the Vakhsh River, Tadjikistan, with a crest length of only 1,975 ft or 602 m. Building since 1973, completion date is still unconfirmed. Meanwhile, the tallest is the 984 ft. (300 m) high Nurek dam in the USSR.

Longest Road Tunnel: The 10.14-mile (16.32 km) long two-lane St. Gotthard Road Tunnel from Goschenen to Airolo Switzerland, opened in 1980.

Longest Railroad Tunnel: Seikan Rail Tunnel, 33.46 miles or 53.84 km, 787 ft (240 m) beneath sea level and 328 ft (100 m) below the seabed of the Tsugaru Strait between Tappi Saki, Honshu, and Fukushima, Hokkaido, Japan.

Longest Wall: The Great Wall of China, completed during 246-210 BC, has a mainline length of 2,150 miles or 3460 km.

Longest and Largest Passenger Liner: The world's longest liner is 'Norway' of 70,202.19 grt and 315.60 m or 1035 ft 7$^{1}/_{2}$ in overall length. Owned by Knut Kloster of Norway.

The world's largest passenger ship (by tonnage) is the 73,192 grt Norwegian Cruise Ship 'Sovereign of the Seas'. Built at the French Shipyard Chantiers de l'Atlantique at St. Nazaire, she entered service from Miami in Jan. 1988.

Largest Cargo Vessel: The largest vessel capable of carrying dry cargo is the 365,000 dwt ore carrier 'Berge Stahl', built in Korea for the Norwegian owner Sig Bergesen Dy. It has a length of 1,125 ft or 343 m, a beam measuring 208 ft or 63 m and was launched on Nov. 5, 1986.

Largest Tanker: The world's largest tanker and ship of any kind is the 624,038-tonne deadweight "Seawise Giant", completed for C. Y. Tung in 1981.

Fastest Rail Speed: The world's fastest rail speed with passengers is 252 m/h or 405 km/h by W. Germany's, Inter-city Experimental train in a test run on May 1, 1988 between Wurzburg and Fulda. The highest speed recorded on any national rail system is 249 m/h or 400.7 Km/h by the French SNCF high speed train TGV-OSE, Train-a Grande Vitesse, on trial in May, 1990.

Longest Rail Line: 9438 km or 5,864$^1/_2$ miles on the Trans-Siberian line from Moscow to Nakhodka, USSR. There are 97 stops in the journey which takes 8 days 4 hr 25 min.

Biggest Railroad Station: Grand Central Terminal, NYC, built 1903–13. It covers 48 acres or 19.4 ha on 2 levels with 41 tracks on the upper level and 26 on the lower. On an average, more than 550 trains and 180,000 people use it per day.

Largest Airliner: The highest capacity airliner is the Boeing 747 'Jumbo Jet', first flown in 1969. It has a capacity of from 385 to more than 500 passengers, with a maximum speed of 602 m/h or 969 km/h.

Fastest Airliner: The Supersonic BAC-Aerospatiale "Concorde", first flown in 1969, with a capacity of 128 passengers, cruises at up to Mach 2.2 (1450 m/h) or 2333 km/h.

Largest Airport: The $2,625 million King Khalid International Airport outside Riyadh, Saudi Arabia, covering an area of 86 sq. miles (223 sq. km) opened on Nov. 14, 1983. It has the world's largest control tower 243 ft (74 m) in height. The Hajj Terminal at the $2,940 million King Abdul-Aziz International Airport, near Jeddah, Saudi Arabia, is the world's largest roofed structure, covering 1.5 sq km or 370 acres.

Busiest Airport: Chicago O'Hare International Airport, with a total of 59130007 passengers in 1989. This represents a take off or landing every 39.66 sec round the clock.

Largest Sea Port: Port of New York and New Jersey. It has a navigable water front of 755 miles or 1215 km. A total of 261 cargo berths and 130 other piers give a total berthing capacity for 391 ships at one time.

Busiest Port and Harbour: The World's busiest port and largest artificial harbour is Rotterdam—Europort in Netherlands, which handled 22,600 vessels in 1986.

Largest Airlines: The USSR State Airline "Aeroflot", established in 1923. This airline operates 1650 aircraft over about 620,000 miles or 997,580 km and employs about 500,000 persons. It carried 119 million passengers and 3 million tons of freight in 1987.

Largest Armed Force: Numerically the largest regular armed force in the world is that of the USSR with 4258000 (1989). China's People's Liberation Army's strength in 1987 was 3200000 with reductions continuing.

Most Populous Country: China. The census of July 1991 shows a population of 1051.3 million. The rate of increase in China is now estimated to be 38,700 a day or 14.1 million per year.

Largest Bank: The International Bank for Reconstruction and Development (founded Dec. 27, 1945), the 'World Bank' (a UN specialised agency) at 1818 H Street NW, Washington DC, had an authorized share capital of $169.7 billion on Apr. 27, 1988. There were 151 members with a subscribed capital of $87.4 billion on Dec. 31, 1986. The International Monetary Fund in Washington DC, had 151 members with total quotas of SDR 89, 987.6 million ($114,068.28 million) as of Apr. 1987.

Arts & Entertainment

Most Valuable Painting: The 'Mona Lisa' (La Gioconda) by Leonardo da Vinci (1452-1519) in the Louvre, Paris, was assessed for insurance purposes at the highest figure ever at $100 million for its move for exhibition in Washington, DC and NYC from Dec. 14, 1962, to March 12, 1963.

Oldest and Largest Museums: The oldest museum is the Ashmolean Museum in Oxford, England, built in 1679-83. Since 1924 it has housed an exhibition of scientific instruments.

The largest single museum is the American Museum of Natural History between 77th and 81st Sts on Central Park West, NYC. Founded in 1874, it comprises 22 interconnected buildings with 1.5 million sq ft of floor space.

The largest complex of museums is Washington D.C's Smithsonian Institution, comprising 15 museums and 6,000 employees. It contains more than 134 million items.

Largest Sculptures: The mounted figures of Jefferson Davis (1808-89), Gen. Robert Edward Lee (1807-70) and Gen. Thomas Jonathan ("Stonewall") Jackson (1824-63), covering 1.33 acres on the face of Stone Mountain, near Atlanta, Ga. They are 90 ft high. Roy Faulkner was on the mountain face for 8 years 174 days with a thermo-jet torch, working with the sculptor Walker Kirtland Hancock and other helpers from Sept. 12, 1963 to March 3, 1972.

Smallest Book: The smallest marketed bound printed book with cursive material is one printed on 22 gsm paper measuring 1 mm × 1 mm (1/25×1/25 in), comprising the children's story "Old King Cole" and published in 85 copies in March 1985 by The

Gleniffer Press of Paisley, Scotland. The pages can only be turned (with care) by the use of a needle.

Largest English Dictionary: The 12-volume Royal quarto Oxford English Dictionary of 15,487 pages published between 1884 and 1928 with a first supplement of 963 pages in 1933 and a further 4-volume supplement, edited by R.W. Burchfield. The final volume (Se–Z and the bibliography) was published in 1986. The work contains 414,825 word listings, 1,827,306 illustrative quotations and reputedly 227,779,589 letters and figures, 63.8 times more than the Bible.

Largest Encyclopaediae: La Enciclopedia Universl Illustrada Europeo-American a (J. Espasa & Sons, Madrid and Barcelona) totalling 105,000 pages in 104 volumes with 10 appendices and an annual supplement since 1935 comprising 165,200,000 words. The price is $2,325.

Largest Library: The Library of Congress (founded Apr. 24, 1800), on Capitol Hill, Washington, DC. By 1988, it contained 86 million items, including 22 million books and pamphlets. The buildings contain 64.6 acres of floor space and 532 miles of book shelves.

Highest Newspaper Circulation: Yomiuri Shimbun (founded 1874) of Japan which attained a figure of 14,474,573 on Apr. 1, 1988. This has been achieved by totalling the figures for editions published in various centres with a morning circulation of 9,456,625 and an evening circulation of 5,017,948. It has a staff of 10,205.

Trud, the Soviet trade union daily, is printed in 53 cities in 15.4 million copies of which only 70,000 are bought at newsstands.

Largest Theatre: The largest building used for theatre is the National People's Congress Building (Ren min da hui tang) on the west side of Tian An Men Square, Peking, China. It was completed in 1959 and covers an area of 5.2 ha (12.9 acres). The theatre seats 10,000 and is only occasionally used as such, as in 1964 for the play. "The East is Red."

The highest capacity purpose-built theatre is the Perth Entertainment Centre in Western Australia, completed at a cost in Australian dollars of $8.3 million in Nov. 1976, with a capacity of 8,003 seats. The stage area is 1115 sq. m (12,000 sq. ft).

Longest Run Play: The longest continuous run of any show is of 'The Mousetrap' by Agatha Christie (Lady Mallowan) (1890-1976). This thriller opened at the Ambassadors Theatre (capacity 453), London, Nov. 25, 1952 and moved after 8,862 performances "down the road" to St. Martin's Theatre, London, March 25, 1974. The 30th Anniversary performance on Nov. 25, 1982 was the 12,481st and the total in March 1988 is 14,693.

The Vicksburg Theatre Guild of Vicksburg, Miss, has been playing the melodrama 'Gold in the Hills' by J. Frank Davis discontinuously but every season since 1936.

Longest-Running Film: 'Emmanuelle' opened on June 26, 1974 at the Paramount City, Paris, and closed on Feb 26, 1985 — the longest continuous run of any one film at one cinema.

Most Oscars: Walter (Walt) Elias Disney (1901-66) won more "Oscars" — the awards of the Academy of Motion Picture Arts and Sciences, instituted on May 16, 1929, for 1927-28 – than any other persons. The physical count comprises 20 statuettes and 12 other plaques and certificates, including posthumous awards.

The only performer to win four Oscars for her starring roles has been Katharine Hepburn (b Hartford, Conn, Nov. 9, 1909), in 'Morning Glory', (1933), 'Guess Who's Coming to Dinner' (1967), 'The Lion in Winter' (1968) and 'On Golden Pond' (1981). She was nominated 12 times.

Grammy Awards: The record number of Grammy awards in a year is 8 by Michael Jackson in 1984. The all-time record is 25 since 1958 by the orchestral conductor Sir Georg Solti (GB) (b Budapest, Hungary, October 21, 1912).

SOBRIQUETS

Sobriquets are secondary names (including nicknames) that become attached to certain persons, places or things. Thus the Bank of England is known as the Old Maid of Threadneedle Street, and the *Malayala Manorama*, the oldest newspaper of Kerala as the Granny of Kottayam.

Bismarck was known as the "Man of Blood and Iron' and Florence Nightingale is famous as 'the Lady with the Lamp'. Tippu Sultan of Mysore is still spoken of as the 'Mysore Tiger'.

Some names, as H.W. Fowler observes, have a large retinue of sobriquets. Rome, for example, may be 'the Eternal City, The City on Seven Hills, the Papal City, the Scarlet Woman, the Scarlet Whore, the Empress of the Ancient World and the Western Babylon'. (M.E.U.)

Sobriquets	......	Primary Names
Bengal's Sorrow	......	River Damodar, W. Bengal, India
Blue Mountains	......	Nilgiri Hills, India
Britain of the South	......	New Zealand
City of the Golden Gate	......	San Francisco, US
City of the Golden Temple	......	Amritsar, India
City of Dreaming Spires	......	Oxford, England
City of Magnificent Distance	......	Washington, D.C., U.S.
City of Palaces	......	Calcutta, India
City of Seven Hills/Eternal City	......	Rome
Cockpit of Europe	......	Belgium
Dark Continent	......	Africa
Emerald Island	......	Ireland
Empire City/City of Skyscrapers	......	New York, US
Forbidden City	......	Lhasa, Tibet
Garden of England	......	Kent, England
Garden of India	......	Bangalore
Gate of Tears	......	Bab-el-mandab
Gateway of India	......	Bombay
Gift of the Nile	......	Egypt
Granite City	......	Aberdeen, Scotland
Great White Way	......	Broadway, New York
Herring Pond	......	Atlantic Ocean
Holy Land	......	Palestine
Hermit Kingdom	......	Korea
Iron Lady	......	Margaret Thatcher
Island of Cloves	......	Zanzibar
Island of Pearls	......	Bahrain
Key of the Mediterranean	......	Gibraltar
Land of Cakes	......	Scotland
Land of the Kangaroo	......	Australia
Land of the Golden Pagoda	......	Burma
Land of Lillies/Land of Maple	......	Canada
Land of Morning Calm	......	Korea
Land of the Midnight Sun	......	Norway
Land of the Rising Sun	......	Japan
Land of Five Rivers	......	Punjab, India
Land of Thousand Lakes	......	Finland
Land of Thunderbolt	......	Bhutan
Land of the White Elephants	......	Thailand
Never Never Land	......	Prairies of N. Australia
Pearl of the Antilles	......	Cuba
Pillars of Hercules	......	Gibraltar
Pink City	......	Jaipur, India
Playground of Europe	......	Switzerland
Powder Keg of Europe	......	Balkans
Quaker City	......	Philadelphia
Queen of the Adriatic	......	Venice, Italy
Queen of the Arabian Sea	......	Cochin, India
Roof of the World	......	Pamirs
Saint of the Gutters	......	Mother Teresa
Sick Man of Europe	......	Turkey

Sorrow of China/Yellow River	......	River Hwang Ho
Spice Garden of India	......	Kerala
Venice of the East	......	Alleppey, India
Venice of the North	......	Stockholm, Sweden
White City	......	Belgrade, Yugoslavia
White Man's Grave	......	Guinea Coast
Windy City	......	Chicago, US
World's Bread Basket	......	Prairies of N. America
World's Loneliest Island	......	Tristan da Cunha

ABBREVIATIONS

Abbreviations are an accepted form of usage in all developed languages. They save time and space–time in talking and space in writing. It is for this reason that abbreviations have become popular with all and sundry.

Formerly abbreviations were used sparingly. Only well known organisations, products, processes, or projects were indicated by their initials. Today, abbreviations are being bandied about indiscriminately. They are being used for all sorts of things, well known, little known and unknown.

AAPSO: Afro-Asian People's Solidarity Organisation.

ABC: Atomic Biological and Chemical (warfare); Audit Bureau of Circulation.

ABM: Anti-Ballistic Missile

AC: Ante Christum (Before Christ): Alternating Current (electricity); Asoka Chakra; Airconditioner.

A/c: Account

ACC: Auxiliary Cadet Crops; Associated Cement Companies

AD: Anno Domini (in the year of our Lord)

ADC: Aide-de-camp (helper or assistant)

ADB: Asian Development Bank

AEC: Atomic Energy Commission

AG: Accountant General; Adjutant General

AH: Anno Hegirae (Mohammed's flight from Makkah to Medina, 622 AD)

AHQ: Air Headquarters or Army Headquarters

AICC: All India Congress Committee

AI: Air India

AIDS: Acquired Immune Deficiency Syndrome

AIMA: All India Manufacturers' (and also Management) Association

AIMO: All India Manufacturers' Organisation

AINEC: All India Newspaper Editors' Conference

AIIMS: All India Institute of Medical Sciences

AIR: All India Radio

AM: Ante Meridiem (before noon)

AITUC: All India Trade Union Congress

ANZAC: Australia, New Zealand Army Crops

ANZUS: Australia, New Zealand, United States of America (a term applied to the Pacific Pact amongst these powers)

AOC: Air Officer Commanding

APC: Agricultural Prices Commission

ARC: Administrative Reforms Commission

ARDC: Agricultural Refinance & Development Corporation

ARP: Air Raid Precautions

ASAT: Anti-Satellite

ASC: Army Service Corps

ASI: Archaeological Survey of India

ASEAN: Association of South East Asian Nations

AVARD: Association of Voluntary Agencies for Rural Development

AVSM: Ati Vishisht Seva Medal

AWACS: Airborne Warning And Control System.

B.A: Baccalaureus Artium; Bachelor of Arts; British Academy

BARC: Bhabha Atomic Research Centre

BBC: British Broadcasting Corporation

BC: Before Christ

BCG: Bacillus Calmette Guerin (Anti-T.B. Vaccine)
B.E: Bachelor of Engineering
BEL: Bharat Electronics Liimited
bhp: brake horse power
BENELUX: Belgium, Netherlands and Luxembourg
BHEL: Bharat Heavy Electricals Ltd.
BIS: Bank of International Settlements: British Information Service
BO: Body Odour
BP: Blood Pressure; Before Present
BPE: Bureau of Public Enterprises
B. Pharm: Bachelor of Pharmacy
BSF: Border Security Force
B Th U: British Thermal Unit

C: Centigrade
CA: Chartered Accountant
CADA: Command Area Development Agency, India
Cantab: Cantabrigian (of Cambridge University)
CARE: Co-operative for American Relief Everywhere
CASA: Church's Auxiliary for Social Action, India
CASTASIA: Conference on the Application of Science and Technology to the Development of ASIA
CBI: Central Bureau of Investigation, India
c&b: caught and bowled (a term in cricket)
CCI: Cricket Club of India
CDP: Community Development Programme
CDS: Compulsory Deposit Scheme
cf: confer (compare)/refer
CGS: Chief of the General Staff: Centimetre, Gram, Second
CGHS: Central Government Health Scheme
CIA: Criminal Investigation Agency: Central Intelligence Agency (USA)
C-in-C: Commander-in-Chief
CID: Criminal Investigation Department
cif: cost, insruance and freight
CIL: Coal India Limited
CIR: Canada India Reactor
CITU: Centre of Indian Trade Unions
CJ: Chief Justice
CLRC: Central Land Reforms Committee
CMO: Chief Medical Officer
CO: Commanding Officer
CIWTC: Central Inland Water Transport Corporation
Co: Company
C/o: Care of
COFEPOSA: Conservation of Foreign Exchange and Prevention of Smuggling Act
COD: cash on delivery
cp: compare
CORE: Congress of Racial Equality
CPI/CPM: Communist Party of India/Marxist
CR: Central Railway
CRP: Central Reserve Police
CSIR: Council of Scientific and Industrial Research, India
CSO: Central Statistical Organisation, India
Cwt: Hundredweight
c.v.: Curriculum vitae
CVC: Chief Vigilance Commissioner

DA: Dearness Allowance
DC: Deputy Commissioner; Direct Current (electricity); District of Columbia
D & C: Dilation and Curettage
DDT: Dichlor-diphenyl-trichloro-ethane
DGTD: Director General of Technical Development, India
DG: Dei Gratia (By the grace of God)
DIG: Deputy Inspector General
disco: discotheque (a place where one can dance to music played on records or discs)
DLO: Dead Letter Office (New name is RLO – Returned Letters Office)
D. Litt: Doctor of Literature
DM: District Magistrate
DMK: Dravida Munnetra Kazagham
DNA: Deoxyribonucleic acid
DPI: Director of Public Instruction
DPSA: Deep Penetration Strike Aircraft
D. Sc.: Doctor of Science
DV: Deo Volente (God Willing)
DVC: Damodar Valley Corporation
DUSU: Delhi University Students' Union
ECA: Economic Co-operation Administration
ECAFE: Economic Commission for Asia and Far East (Now ESCAP)
ECE/ECA/ECLA: Economic Commission for Europe/ Africa/Latin America
ECG: Electro Cardiogram
ECM: European Common Market
ECOSOC: Economic and Social Council (UN)
EEC: European Economic Community
EEG: Electro Encephalogram

eg: exempli gratia (for example)
E-in-C: Engineer-in-Chief
EMG: Electro Myogram
EMF: Electro-Motive Force
EMS: European Monetary System
E&OE: Errors and Omissions Excepted
EPLF: Eritrean People's Liberation Front
EPNS: Electroplated Nickel Silver
ERDA: Energy Research and Development Administration
ERP: European Recovery Programme
ESCAP: Economic and Social Commission for Asia and the Pacific
ESI: Employees State Insurance
ESP: Extra Sensory Perception
etc: et ceteri or et cetera (and others and so forth)
et seq: et sequentia (and what follows)
Ex-officio: By virtue of one's office.
FACT: Fertilisers and Chemicals Travancore Ltd.
FAO: Food and Agriculture Organisation
FBI: Federal Bureau of Investigation
FCI: Food Corporation of India, Fertilizer Corporation of India
FERA: Foreign Exchange Regulation Act (India)
FICCI: Federation of Indian Chambers of Commerce and Industry
FLS: Fellow of Linnaean Society
FM: Field Marshal
fob: free on board
for: free on rail
FRG: Federal Republic of Germany
FRCP: Fellow of the Royal College of Physicians
FRCS: Fellow of the Royal College of Surgeons
FRS: Fellow of the Royal Society

GATT: General Agreement on Tariffs and Trade
GBS: George Bernard Shaw
GDR: German Democratic Republic (East Germany)
GHQ: General Headquarters
GI: Government Issue: A term which is normally applied to the American soldiers
GMT: Greenwich Mean Time
GNP: Gross National Product
GOC: General Officer Commanding
GPO: General Post Office
GRT: Gross Rated Tonnage

HAL: Hindustan Aeronautics Limited
HE: His or Her Excellency
HEC: Heavy Engineering Company
HEL: Heavy Electricals Limited
HMI: Himalayan Mountaineering Institute
HMT: Hindustan Machine Tools
Hon: Honourable, Honorary
hp: horse power
HP: Harmonic Progression; Himachal Pradesh
HQ: Headquarters
Hr: Hour
HSD: High Speed Diesel
HSL: Hindustan Steel Limited
HWM: High Water Mark
HUDCO: Housing and Urban Development Corporation
IAMC : Indian Army Medical Corps
IAA: International Airports Authority
IA: Indian Airlines
IAF: Indian Air Force
IAEA: International Atomic Energy Agency
IARI: Indian Agricultural Research Institute, Delhi
IAS: Indian Administrative Service
IAAS: Indian Audit and Accounts Service
IATA: International Air Transport Association
IBM: International Business Machines
Ib; Ibid: Ibidem. (in the same place (book or chapter)
IBRD: International Bank of Reconstruction and Development
ICAO: International Civil Aviation Organisation
ICAR: Indian Council of Agricultural Research
ICBM: Inter-Continental Ballistic Missile (developed by USSR)
ICCR: Indian Council of Cultural Relations
ICICI: Industrial Credit Investment Corporation of India Ltd.
ICJ: International Court of Justice
ICMR: Indian Council of Medical Research
ICS: Indian Civil Service
ICWA: Indian Council of World Affairs
IDA: International Development Agency
IDBI: Industrial Development Bank of India
IDPL: Indian Drugs and Pharmaceuticals Limited
ie: id est (that is)
IENS: Indian and Eastern Newspaper Society (now INS).

IFAD: International Fund for Agricultural Development
IFC: Industrial Finance Corporation; International Finance Corporation
IFS: Indian Foreign Service; Indian Forest Service
IGY: International Geophysical Year
IIPA: Indian Institute of Public Administration
IISCO: Indian Iron and Steel Company
IIT: Indian Institute of Technology
ILO: International Labour Organisation
IMCO: Inter-government Maritime Consultations Organisation
IMF: International Monetary Fund
IMS: Indian Medical Service
IN: Indian Navy
INA: Indian National Army
in cog: in cognito (unknown)
INS: Indian Naval Ship
INSDC: Indian National Scientific Documentation Centre
INTUC: Indian National Trade Union Congress
INDIPEX: Indian International Philatelic Exhibition
INSAT: Indian National Satellite
INTELSAT: International Telecommunication Satellite
INTERPOL: International Police
infra dig: infra dignitatum (below status)
IOC: Indian Oil Corporation
IOU: I Owe You
IPC: Indian Penal Code
IPCL: Indian Petro-Chemicals Corporation Ltd
IPS: Indian Police Service; Inter Press Service
IQ: Intelligence Quotient
iq: idem quod (the same as)
IQSY: International Quiet Sun Year (1 Jan. 1964–31 Dec. 1965)
IRA: Irish Republican Army
IRC: International Red Cross
IRBM: Intermediate Range Ballistic Missile
IRRI: International Rice Research Institute
IRO: International Refugee Organisation
IRS: Indian Revenue Service
IRTS: Indian Railway Traffic Service
ISRO: Indian Space Research Organisation
ISI: Indian Standards Institution
IST: Indian Standard Time
ISSP: Indian Scientific Satellite Project
ITBF: Indo-Tibetan Border Force
ITI: Indian Telephone Industries; Industrial Training Institute
ITO: International Trade Organisation; Income-Tax Officer
ITU: International Telecommunication Union
ITUC: Indian Trade Union Congress
ITY: International Tourist Year
IUCD: Intra-Uterine Contraceptive Device
IUCN: International Union for Conservation of Nature and Natural Resources

JAL: Japan Airlines
JCO: Junior Commissioned Officer
JP: Justice of the Peace

KANU: Kenya African National Union
KG: Knight of the Garter: Kindergarten
KGB: Komitet Gosudarstvennony Bizo Pasnosti (Russian Secret Police)
KKK: Ku Klux Klan (U.S. Secret Society–Anti-Negro, Anti-Jewish)
KMT: Kuomintang (Chinese National Party)
LASER: Light Amplification by Stimulated Emission of Radiation
LD: Lok Dal
Lib: Liberation
D. Litt: Doctor of Letters/Literature.
LIC: Life Insurance Corporation (of India)
LL.B.: Bachelor of Laws
LL.D.: Doctor of Laws
LL.M.: Master of Laws
loc cit: loco citato (at the place quoted)
LPG: Liquefied Petroleum Gas
Lt: Lieutenant
Lt. Col.: Lieutenant Colonel
LSD: Lysergic acid di-ethylamide
M: Monsieur (Mister)
M.A. Magister Artium (Master of Arts)
MASER: Micro-wave Amplification by Stimulated Emission of Radiation
MBA: Master of Business Administration
MBBS: Bachelor of Medicine and Bachelor of Surgery
MBE: Member of the British Empire
MC: Military Cross; Member of Council; Municipal Committee; Municipal Commissioner; Medical Certificate
MCC: Marylebone Cricket Club
M.D.: Doctor of Medicine
Mlle: Mademoiselle (Miss)
Mlles: Mesdemoiselles (Plural of Miss)
Mme: Madam (Mrs.)
Mmes: Mesdames (Plural of Mrs.)

MI: Military Intelligence
MISA: Maintenance of Internal Security Act
MIRV: Multiple Independently Targetable Reentry Vehicle
Misc: Miscellaneous
MIT: Massachusetts Institute of Technology, USA
MKS: Metre Kilogram Second (System)
MLA: Member of Legislative Assembly
MLC: Member of Legislative Council
MLF: Multilateral Force
MMTC: Minerals and Metals Trading Corporation
MNC: Multi-National Corporation
MP: Member of Parliament; Madhya Pradesh
MPLA: People's Movement for Liberation of Angola
mph: miles per hour
MRA: Moral Re-Armament
MRCP: Member of the Royal College of Physicians
MRCS: Member of the Royal College of Surgeons
MRTPC: Monopoly & Restrictive Trade Practices Commission
M.Sc.: Master of Science
MS/MSS: Manuscript/Manuscripts
MVC: Maha Vir Chakra

NABARD: National Bank for Agriculture and Rural Development
NAEP: National Adult Education Programme
NAFED: National Agricultural Co-operative Marketing Federation
NASA: National Aeronautics and Space Administration (USA)
NATO: North Atlantic Treaty Organisation
NAYE: National Alliance of Young Entrepreneurs
NB: Nota Bene (note well)
NCC: National Cadet Corps
NCDC: National Coal Development Corporation
NCAER: National Council of Applied Economic Research
NCST: National Committee on Science & Technology
NCERT: National Council of Educational Research and Training
NCO: Non-Commissioned Officer
NDA: National Defence Academy
NDF: National Defence Fund
NDC: National Development Council
NDS: National Discipline Scheme
NEFA: North-East Frontier Agency
NFR: North-East Frontier Railway
NER: North Eastern Railway
NFIR: National Federation of Indian Railwaymen
NIESBUD: National Institute of Entrepreneurship and Small Business Development (India)
NLTA: National Lawn Tennis Association
NMDC: National Mineral Development Corporation
non seq: non sequitur (it does not follow)
NOC: No Objection Certificate
NP: Notary Public
NPT: Nuclear Non-Proliferation Treaty
NPC: National Productivity Council (India)
N and Q: Notes and Queries
NSC: National Service Corps
NSO: National Sports Organisation
NSUI: National Students Union of India
NTP: Normal Temperature and Pressure
NR: Northern Railway
NVF: National Volunteer Force

O & M: Organisation and Methods
OAS: Organisation for American States
OAU: Organisation of African Unity.
OBE: Officer (of the Order of the) British Empire.
OC: Officer Commanding
OCS: Overseas Communication Service
OECD: Organisation for Economic Co-operation and Development
OED: Oxford English Dictionary
OEEC: Organisation for European Economic Co-operation
OGL: Open General Licence
OIL: Oil India Limited
OK: All Correct (Slang)
OAPEC: Organisation of Arab Petroleum Exporting Countries
OPEC: Organisation of Petroleum Exporting Countries
OTS: Officers' Training School
OXFAM: Oxford Committee for Famine Relief
Oxon: Oxoniensis (of Oxford University)
OIGS: On India Government Service
ONGC: Oil and Natural Gas Commission
op cit: opero citato (in the work cited)
PA: Personal Assistant; Press Association
PAC: Provincial Armed Constabulary
PDA: Preventive Detention Act

PAYE: Pay As You Earn
pc: per centum; post card
PEC: Project and Equipment Corporation
PEN: (international Club of) Poets, Playwrights, Essayists, Editors and Novelists
Perks: Perquisites of Office
Per pro: Per procuration (On behalf of)
Ph.D: Doctor of Philosophy
PIB: Press Information Bureau
PIN: Postal Index Number
PKI: Partai Kommunis Indonesia (Communist Party of Indonesia)
PL480: Public Law 480 (Enactment in US under which foreign aid is given)
PM: Post Meridiem; Prime Minister
PMG: Post Master General
P&O: Peninsular and Oriental (Steamship) Co.
POW: Prisoner of War
PRD: Prantiya Raksha Dal
PRG: Provisional Revolutionary Government
Pro-tem: Pro tempore (for the time being)
PS: Post Scriptum (written after); Private Secretary, Personal Secretary
PPS: Post Post Scriptum (additional post script)
PSP: Praja Socialist Party
PT: Physical Training
PTI: Press Trust of India
PTO: Please Turn Over
PVC: Poly Vinyl Chloride; Param Vir Chakra
PVSM: Param Vishisht Seva Medal
PWD: Public Works Department
Q: Queue
qed: Quod Erat Demonstrandum (that which was to be demonstrated)
QMG: Quarter Master General
qv: quod vide (which see)
RADAR: Radio Detecting and Ranging
R&D: Research and Development
RAW: Research & Analysis Wing
RBI: Reserve Bank of India
RCC: Reinforced Cement Concrete
rtd: refer to drawer
RIP: Requiescat in pace (May he or she rest in peace)
RITES: Rail India Technical & Economic Services
RLO: Returned Letters Office
RMS: Railway Mail Service
RN: Royal Navy
RNA: Ribonucleicacid
RNAC: Royal Nepal Airlines Corporation
RPM: Revolutions Per Minute
RRC: Reactor Research Centre
RSVP: Respondez Sil vous Plait (Reply if you please)
RSS: Rashtriya Swayam Sewak Sangh
SAIL: Steel Authority of India
SAM: Surface to Air Missile
SAS: Small Astronomy Satellite
SC: Supreme Court; Security Council
SCI: Shipping Corporation of India
SCRA: Special Class Railway Apprentices
SDO: Sub-Divisional Officer
SDR: Special Drawing Rights
SEATO: South-East Asia Treaty Organisation
SITE: Satellite Instructional Television Experiment
SHAPE: Supreme Headquarters of Allied Powers in Europe
SLFP: Sri Lanka Freedom Party
SLV: Satellite Launch Vehicle
SP: Superintendent of Police
SPCA: Society for the Prevention of Cruelty to Animals
SPCK: Society for the Promotion of Christian Knowledge
SR: Southern Railway
SS: Steamship
SSB: Service Selection Board
SST: Supersonic Transport
STARS: Satellite Tracking and Ranging Station
STC: State Trading Corporation
STD: Subscriber Trunk Dialling; Sexually Transmitted Diseases
SUNFED: Special United Nations Fund for Economic Development
SVP: Saturated Vapour Pressure
TA: Territorial Army; Travelling Allowance
TAAI: Travel Agents Association of India
TB: Tuberculosis
TC: Trusteeship Council (UN Organ)
TDA: Trade Development Authority
TELCO: Tata Engineering and Locomotive Company
TISCO: Tata Iron and Steel Company
TMO: Telegraphic Money Order
TNT: Trinitrotoluene

TERLS: Thumba Equatorial Rocket Launching Station

TRACT: Transportable Remote Area Communications Terminal

TTE: Travelling Ticket Examiner

TVA: Tennessee Valley Authority

TULF: Tamil United Liberation Front

TWA: Trans-World Airlines

UGC: University Grants Commission

UK: United Kingdom

UNAEC: United Nations Atomic Energy Commission

UNCIP: United Nations Commission for India and Pakistan

UNCSTD: United Nations Conference on Science & Technology for Development

UNEP: United Nations Environment Programme

UNCTAD: United Nations Conference on Trade and Development

UNEF: United Nations Emergency Force (UAR)

UNESCO: United Nations Educational, Scientific and Cultural Organisation

UNI: United News of India

UNICEF: United Nations International Children's Emergency Fund, now known only as 'United Nations Children's Fund'

UNIDO: United Nations Industrial Development Organisation.

UNIPOM: United Nations India-Pakistan Observation Mission

UNRRA: United Nations Relief and Rehabilitation Administration

UP: Uttar Pradesh

UPSC: Union Public Service Commission

USA: United States of America

USAID: United States Agency for International Development

USI: United States of Indonesia

USSR: Union of Soviet Socialist Republics

VAT: Value Added Tax

VC: Vice-Chancellor, Victoria Cross

VD: Venereal Disease (see STD)

VCO: Viceroy's Commissioned Officer

Vr.C: Vir Chakra

VIP: Very Important Person

VPP: Value Payable Post

VVF: Village Volunteer Force (in India)

WAY: World Assembly of Youth

WFTU: World Federation of Trade Unions

WHO: World Health Organisation

WMO: World Meteorological Organisation

WWF: World Wildlife Fund, now renamed Worldwide Fund for Nature

Xmas: Christmas

YMCA: Young Men's Christian Association

YWCA: Young Women's Christian Association

ZETA: Zero Energy Thermo-nuclear Assembly or Apparatus

ZIP: Zonal Improvement Plan.

THE UN HAS 166 MEMBERS

The United Nations, past 46, remains the hope and conscience of the world, more especially of the smaller nations among its 166 members. The UN and its 17 independent specialised agencies and 14 major Programmes and Funds embrace almost every man in every corner of the globe.

The last six members admitted to the UN in September 1991 were Estonia, Latvia, Lithuania, North Korea, South Korea, Marshall Island and Micronesia. (See box).

On the occasion of its 40th anniversary in September 1985, 100-odd Presidents and Prime Ministers, Kings and dictators gathered at the 39-storied world organisation headquarters by New York's East River.

United Nations, an association of sovereign states bound by a Charter to maintain international peace and security came into being on 24th Oct. 1945. The Charter was signed by the delegates of 50 nations on 26th June, 1945 at San Francisco. The UN has now on its rolls almost all the independent countries of the world.

For a long time China was represented in the UN by Taiwan which styled itself Nationalist China. Communist China which truly represented China was kept out of the UN mainly on account of the US veto.

This anomaly was removed in 1971 by admitting Communist China as the representative of all China in the UN. Red China thus became a permanent member of the Security Council. Taiwan not only lost its permanent seat in the Council but also its primary membership of the UN.

45 Anniversary
UNITED NATIONS
26 JUNE 1990
UNITED NATIONS 25c
45th Anniversary of the United Nations
45c
UNITED NATIONS
45th ANNIVERSARY OF THE UNITED NATIONS

Facsimile of stamp issued on the 45th anniversity of the UN on 26 June, 1990.

In December 1974 the UN adopted a *Charter of Economic Rights*. This charter consisting of 34 articles is a landmark in the history of UN. It includes the right of each state "to freely exercise full permanent sovereignty over its wealth and natural resources, to regulate and exercise authority over foreign investments within its national jurisdiction and to nationalise, expropriate or transfer the ownership of foreign property".

The 1974 declaration of rights recognised the imperative necessity of reducing disparities between developed, developing and undeveloped countries of the world. It envisages a New International Economic Order (NIEO). To achieve this new order the UN Development Programme (UNDP) was inaugurated in 1975 under a Director General of Development.

Principal Organs of the UN are: General Assembly, Secretariat, Security Council, Trusteeship Council, Economic and Social Council and International Court of Justice.

Headquarters: First Avenue, UN Plaza, New York City, N.Y., USA.

General Assembly: The General Assembly of the UN is the nearest that the world has yet come to the visionary 'Parliament of Man'. The Assembly consists of the representatives of all the member states. Each state has one vote, but may send 5 representatives. The General Assembly meets at least once in a year. Special sessions may be summoned by the Secretary General, on a request by the Security Council.

The General Assembly passes the annual budget of the UN and determines the contribution payable by each member. It receives and considers the reports of the special committees including the Security Council. Important questions are decided by a two-thirds majority and other questions by a simple majority.

The General Assembly elects the non-permanent members of the Security Council, the members of the Economic and Social Council and the elected members of the Trusteeship Council. The Judges of the International Court of Justice are elected by the General Assembly, in conjunction with the Security Council. The General Assembly elects its own President and Vice Presidents every year.

2. Security Council consists of 15 members, each of which has one vote. There are five permanent and 10 non-permanent members elected for a 2-year term by a two-thirds majority of the General Assembly. The permanent members have the power to veto any move.

Retiring members are not eligible for immediate re-election. Any other member of the United Nations may be invited to participate without vote in the discussion of questions specially affecting its interests.

The Presidency of the Security Council is held for one month in rotation by the member states in the English alphabetical order of their names.

Permanent Members: China, France, USSR,

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* The term of India's G. S. Pathak, who is a member of the Court will end in Feb. 1991.

UK, USA. *Non-permanent Members:* India, Ecquadar, Zimbabwe, Austria and Belgium (until December 31, 1992), Cuba, Yemen, Romania, Ivory Coast and Zaire (until Dec. 31, 1991).

3. Economic & Social Council is responsible under the General Assembly for carrying out the functions of the United Nations with regard to international economic, social, cultural, educational, health and related matters.

The Economic and Social Council consists of 54 Member States elected by a two-thirds majority of the General Assembly. The Council has the following Regional Economic Commissions: ECE (Economic Commission for Europe, Geneva); ESCAP (Economic and Social Commission for Asia and the Pacific, Bangkok); ECLA (Economic Commission for Latin America, Santiago, Chile); ECA (Economic Commission for Africa, Addis Ababa). ECWA (Economic Commission for Western Asia, Baghdad).

4. Trusteeship Council. The Charter provides for an international trusteeship system to safeguard the interests of the inhabitants of territories which are not yet fully self-governing and which may be placed thereunder by individual trusteeship agreements. These are called trust territories.

All of the original 11 trust territories except one, the Pacific Islands (Micronesia), administered by the USA, have become independent or joined independent countries.

5. International Court. The International Court of Justice was created by an international treaty, the Statute of the Court, which forms an integral part of the United Nationals Charter. All members of the United Nations are *ipso facto* parties to the Statute of the Court. There are 15 judges*.

President: Maria Ruda (Argentina).

The Court has its seat at The Hague, but may sit elsewhere whenever it considers this desirable. The expenses of the Court are borne by the UN.

6. Secretariat is composed of the Secretary-General, who is the chief administrative officer of the organization, and an international staff appointed by him under regulations established by the General Assembly. However, the Secretary General, the High Commissioner for Refugees and the Managing Director of the Fund are appointed by the General Assembly. The first Secretary General was Trygve Lie (Norway), 1946-53; the second, Dag Hammarskjold (Sweden), 1953-61; the third, U. Thant (Burma), 1961-71; the fourth, Kurt Waldheim (Austria), 1972-81.

Secretary General: Javier Peres de Cuellar (Peru), appointed on 1 Jan. 1982 for a 5-year term and reelected for another term in January 1986.

The Secretary-General is assisted by Under-Secretaries-General and Assistant Secretaries-General.

U.N. System: The bulk of the work of the UN, measured in terms of money and personnel, is aimed at achieving the pledge made in Article 55 of the Charter to 'promote higher standards of living, full employment and conditions of economic and social progress and development.'

In addition to the 17 independent specialized agencies, there are some 14 major United Nations programmes and funds devoted to achieving economic and social progress in the developing countries.

United Nations Development Programme (UNDP) is the world's largest agency for multilateral, technical and pre-investment co-operation. It is the funding source for most of the technical assistance provided by the United Nations system, and UNDP is active in almost 150 countries and territories and in virtually every economic and social sector. UNDP assistance is provided only at the request of Governments and in response to their priority needs, integrated into over-all national and regional plans.

United Nations Children's Fund (UNICEF) established in 1946 as United Nations International Children's Emergency Fund to deliver post-war relief to children, now concentrates its assistance on development activities aimed at improving the quality of life for children and mothers in developing countires.

Executive Director: James P. Grant (USA).

The UN Fund for Population Activities (UNFPA) carries out programmes in over 130 countries and territories. The Fund's aims are to build up capacity to respond to needs in populaton and family planning; to promote awareness of population problems in both developed and developing countries and possible strategies to deal with them; to assist developing countries at their request in dealing with population problems. More than 25% of international population assistance to developing countries is channelled through UNFPA.

Executive Director: Nafis Sadik (Pakistan).

Relief Agencies. Humanitarian relief to refugees and victims of natural and man-made disasters is also an important function of the UN system. Among the organizations involved in such relief activities are the Office of the UN Disaster Relief Co-ordinator (UNDRO), the Office of the UN High Commissioner for Refugees (UNHCR) and the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA).

UNRWA was created by the General Assembly in 1949 as a temporary non-political agency to provide relief to the nearly 750,000 people who became refugees as a result of the disturbances during and after the creation of the State of Israel in the former British Mandate territory of Palestine.

Commissioner-General: Giorgio Giacomelli.

United Nations High Commissioner for Refugees (UNHCR) was established by the UN General Assembly with effect from 1 Jan. 1951, originally for three years. Since 1954, its mandate has been renewed for successive five-year periods.

For its work on behalf of refugees around the

The UN: Milestones of Peace

1945: *On 24 October the United Nations is set up.*

1947: *The General Assembly adopts a plan for Palestine which would, at the end of the British mandate in 1948, partition it into an Arab state and a Jewish state with Jerusalem under UN administration.*

1949: *Consultations lead to resolution of crisis over access of the West to the divided city of Berlin. A UN agency is created to look after the welfare of Palestinian refugees.*

1950: *The Security Council calls on member states to help the southern part of Korea repel the invasion from the north.*

1951: *Convention of refugees is adopted spelling out their rights and international standards for their treatment.*

1952: *The General Assembly decides to take up the entire question of apartheid.*

1953: *Armistice in Korea results from UN initiatives.*

1954: *Quiet and successful negotiations are made for the release of American airmen held POWs in China. The UN High Commissioner for Refugees wins the Nobel Peace Prize.*

1955: *First International conference on the peaceful uses of atomic energy in Geneva initiates a broad range of co-operation in the field.*

1956: *War in the Middle East over the Suez Canal ends with the deployment of a UN peace-keeping force in Sinai.*

1958: *A UN observer group helps defuse the Lebanon crisis. Another UN agency, the Inter Government Organization, sets safety standards for shipping. French Togoland becomes independent after a UN-supervised plebiscite.*

1959: *UN-supervised plebiscite in the British Cameroons results in a part of the territory being incorporated in Nigeria and the other into the Cameroons.*

1960: *At the request of the newly independent state of Congo, the largest ever UN peace-keeping force is sent there.*

1962: *UN plays a key role in resolving the US-Soviet confrontation over nuclear missiles in Cuba. UN takes over administration of West New Guinea before transferring power to Indonesia. An observer mission is sent to aid peace efforts in Yemen.*

1963: *The UN and Food and Agricultural Organisation (FAO) set up the World Food Programme.*

1964: *A UN peace-keeping force is sent to Cyprus.*

1965: *A UN observer mission helps disengagement of forces after war between India and Pakistan. UNICEF is awarded the Nobel Peace Prize.*

1966: *The Security Council imposes mandatory sanctions against Southern Rhodesia where a racist white minority government unilaterally declared independence from Britain in 1965.*

1967: *After war erupts again in the Middle East, the UN adopts a resolution calling for withdrawal of forces from occupied territories and recognises the right to security of all states in the area.*

1970: *The General Assembly adopts the first internationally agreed set of principles on seabed and ocean floor zones beyond national jurisdiction.*

1971: *The International Court of Justice declares the continued presence of South Africa in Namibia "illegal". China admitted to UN. UN organises massive relief measures for Bangladesh victims of the conflict with Pakistan.*

1973: *A new peace-keeping force takes up position in the Sinai and Golan Heights.*

1977: *The Security Council makes arms embargo against South Africa mandatory.*

1978: *Security Council adopts the plan put forward by five Western countries for the independence of Namibia. A UN peace-keeping force moves into Lebanon.*

1980: *A campaign co-ordinated by the World Health Organisation (WHO) results in the eradication of smallpox from the world.*

1982: *The convention on the Law of the Sea is adopted.*

1983: *The Secretary-General visits Southern Africa for consultations on Namibia's independence.*

1985: *Massive famine relief measures are taken up for the people of Africa.*

1988: *Iran and Iraq break their 8-year old hostilities at the instance of UN Secretary General; UN peace-keeping forces wins Nobel Peace Prize.*

1988: *Ushers in independence for Namibia.*

1991: *Multinational forces under the aegis of the U.N. liberate Kuwait from Iraqi occupation.*

Seven Countries Join

Seven new members joined the comity of nations in 1991, bringing the total to 166. The three Baltic States-Estonia, Lativa and Lithunia-seceded from Soviet Union in the last week of August and got admitted to the UN in record time-on 17th September 1991. With them, pending applications of North and South Korea, Micronesia and Marshall Islands were also taken up.

Member States

(with year of joining)

1.	Afghanistan	1946
2.	Albania	1955
3.	Algeria	1962
4.	Angola	1976
5.	Antigua and Barbuda	1981
6.	Argentina*	1945
7.	Australia*	1945
8.	Austria	1955
9.	Bahamas	1973
10.	Bahrain	1971
11.	Bangladesh	1974
12.	Barbados	1966
13.	Belgium*	1945
14.	Belize	1981
15.	Benin	1960
16.	Bhutan	1971
17.	Bolivia*	1945
18.	Botswana	1966
19.	Brazil*	1945
20.	Brunei Darussalam	1984
21.	Bulgaria	1955
22.	Burkina Faso	1960
23.	Burma	1948
24.	Burundi	1962
25.	Byelorussia*	1945
26.	Cambodia	1955
27.	Cameroon	1960
28.	Canada*	1945
29.	Cape Verde	1975
30.	Central African Rep.	1960
31.	Chad	1960
32.	Chile*	1945
33.	China*	1945
34.	Colombia*	1945
35.	Comoros	1975
36.	Congo	1960
37.	Costa Rica*	1945
38.	Cote d'Ivoire	1960
39.	Cuba*	1945
40.	Cyprus	1960
41.	Czechoslovakia*	1945
42.	Denmark*	1945
43.	Djibouti	1977
44.	Dominica	1978
45.	Dominican Republic*	1945
46.	Ecuador*	1945
47.	Egypt*	1945
48.	El Salvador*	1945
49.	Equatorial Guinea	1968
50.	Estonia	1991
51.	Ethiopia*	1945
52.	Fiji	1970
53.	Finland	1955
54.	France*	1945
55.	Gabon	1960
56.	Gambia	1965
57.	Germany, Federal Rep. of**	1990
58.	Ghana	1957
59.	Greece*	1945
60.	Grenada	1974
61.	Guatemala*	1945
62.	Guinea	1958
63.	Guinea-Bissau	1974
64.	Guyana	1966
65.	Haiti*	1945
66.	Honduras*	1945
67.	Hungary	1955
68.	Iceland	1946
69.	India*	1945
70.	Indonesia	1950
71.	Iran*	1945
72.	Iraq*	1945
73.	Ireland	1955
74.	Israel	1949
75.	Italy	1955
76.	Jamaica	1962
77.	Japan	1956
78.	Jordan	1955
79.	Korea (North)	1991
80.	Korea (South)	1991
81.	Kenya	1963
82.	Kuwait	1963
83.	Laos People's Dem. Rep.	1955
84.	Latvia	1991
85.	Lebanon	1945
86.	Lesotho	1966
87.	Liberia*	1945
88.	Libyan Arab Jamahiriya	1955
89.	Liechtenstein	1990
90.	Lithunia	1991
91.	Luxembourg*	1945
92.	Madagascar	1960
93.	Malawi	1964
94.	Malaysia	1957
95.	Maldives	1965
96.	Mali	1960
97.	Malta	1964
98.	Marshall Islands	1991
99.	Mauritania	1961
100.	Mauritius	1968
101.	Mexico*	1945
102.	Micronesia	1991
103.	Mongolia	1961
104.	Morocco	1956
105.	Mozambique	1975
106.	Namibia	1990
107	Nepal	1955
108.	Netherlands*	1945
109.	New Zealand*	1945
110.	Nicaragua*	1945
111.	Niger	1960
112.	Nigeria	1960
113.	Norway*	1945
114.	Oman	1971
115.	Pakistan	1947
116.	Panama*	1945
117.	Papua New Guinea	1975
118.	Paraguay*	1945
119.	Peru*	1945
120.	Philippines*	1945
121.	Poland*	1945
122.	Portugal	1955
123.	Qatar	1971
124.	Romania	1955
125.	Rwanda	1962
126.	St. Christopher and Nevis	1983
127.	St. Lucia	1979
128.	St. Vincent and the Grenadines	1980
129.	Samoa, Western	1976
130.	Sao Tome and	

the Comity of Nations

Principe	1975
131. Saudi Arabia*	1945
132. Senegal	1960
133. Seychelles	1976
134. Sierra Leone	1961
135. Singapore	1965
136. Solomon Islands	1978
137. Somalia	1960
138. South Africa*	1945
139. Spain	1955
140. Sri Lanka	1955
141. Sudan	1956
142. Suriname	1975
143. Swaziland	1968
144. Sweden	1946
145. Syrian Arab Rep.*	1945
146. Tanzania	1961
147. Thailand	1946
148. Togo	1960
149. Trinidad and Tobago	1962
150. Tunisia	1956
151. Turkey*	1945
152. Uganda	1962
153. Ukrainian Soviet Socialist Rep*	1945
154. USSR*	1945
155. United Arab Emirates	1971
156. UK*	1945
157. USA*	1945
158. Uruguay*	1945
159. Vanuatu	1981
160. Venezuela*	1945
161. Vietnam	1977
162. Yemen Republic of***	1990
163. Yugoslavia*	1945
164. Zaire	1960
165. Zambia	1964
166. Zimbabwe	1980

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* Original Member

** Both East and West Germany became members in 1973. Unified Germany came into being in 1990.

*** Yemen Arab Republic became a member in 1947 and Yemen PDR in 1967. Unified Yemen came into being in 1990.

MICRONESIA

Capital: Kolonia; **Area:** 702 sq.km.; **Pop:** 86,094; **Language:** English; **Currency:** US Dollar; **per capita:** Not available.

The Federated States of Micronesia (FSM) extends across the 1,800 mile-long Caroline Island archipelago. The 4 states of the FSM are Pohbnpei, Kosrae, Truk and Yap. Each state consists of several islands, except for Kosrae, a single island. The islands vary geologically from high, mountainous islands to low, coral atolls.

FSM was a Trusteeship Territory of the United States (USA). In November 1956 USA entered into a compact of Free Association with it.

MARSHALL ISLANDS

Capital: Majuro; **Area:** 181 sq.km.; **Pop:** 40,609; **Language:** English; **Literacy:** Not available; **Religion:** Micronesiam/Christian; **Currency:** Dollar (US) **per capita:** Not available.

The Republic of Marshall Islands consists of two island/atoll chains, the Ratak (sunrise) Chain and the Ralik (sunset) Chain totalling 31 atolls. Each atoll is a cluster of several small islands circling a lagoon. The capital Majuro is about 3200 kms south-west of Honolulu.

Marshall Islands was a Trusteeship territory of the United States (USA) until Oct. 1986.

ESTONIA

Capital: Talinn; **Area:** 45,100 sq,.km.; **Pop:** 1,573,000.

Estonia seceded from Soviet Union and attained independence in August 1991.

Agriculture and dairy farming are the chief occupations. Some 22% of the territory is covered by forests which provide good material for its sawmills, furniture, match and pulp industries, as well as wood fuel.

LATVIA

Capital: Riga; **Area:** 63,700 sq.km.; **Pop:** 2,681,000.

Latvia seceded from Soviet Union and attained independence in August 1991.

Urbanisation has changed the face of this predominantly agricultural country.

Cattle breeding and dairy farming are the chief agricultural occupations. Oats, barley, rye, potatoes and flax are the main crops.

Latvia is a main producer of electric railway passenger cars and long-distance telephone exchanges.

LITHUANIA

Capital: Vilinius (Vilna); **Area:** 62,500 sq.km.; **Pop:** 3,690,000.

Lithuania seceded from Soviet Union and attained independence in August 1991.

Lithuania before 1940 was a mainly agricultural country, but has since been considerably industrialized.

Forests cover 1,554,000 hectares: 70% of the forests consist of conifers, mostly pines. Peat reserves total 4,000 m.cu. metres.

Heavy engineering, ship building and building material industries are developing.

world, UNHCR was awarded the Nobel Peace Prize in 1955 and again in 1961.

Headquarters: Palais de Nations, 1211, Geneva 10, Switzerland.

High Commissioner: Thorvald Stoltenberg (Norway).

Specialized Agencies: International Atomic Energy Agency (IAEA), came into existence on 29 July 1957. Member States: 150. *Headquarters:* Vienna International Centre, P.O. Box 100, A-1400 Vienna, Austria.

Director-General: Hans Blix (Sweden).

United Nations Industrial Development Organization (UNIDO). It provides developing and underdeveloped countries with advice on all aspects of industrial policy. Converted into a specialised agency of UN in 1985. *Headquarters:* Vienna International Centre, Austria. *Director-General:* Domingo Stazon (Philippines).

International Labour Organzation (ILO) established in 1919 as an autonomous part of the League of Nations, is an intergovernmental agency with a tripartite structure, in which representatives of governments, employers and workers participate. In 1969 won the Nobel Peace Prize. Has 150 members. *Headquarters:* International Labour Office, CH-1211, Geneva 22, Switzerland. *Director-General:* Michel Hangenne (Belgium).

Food and Agriculture Organization (FAO): The UN Conference on Food and Agriculture in May 1943, at Hot Springs, Virginia, set up an Interim Commission in Washington in July 1943 to plan the FAO, which came into being on 16th October 1945. Sponsors the World Food Programme. *Headquarters:* Viale delle Terme di caracalla, Rome, Italy. *Director-General:* Dr. Erdouard Saouma (Lebanon).

United Nations Educational, Scientific and Cultural Organization (UNESCO): A Conference for the establishment of an Educational, Scientific and Cultural Organization of the United Nations was convened by the Government of the UK in association with the Government of France, and met in London, 1 to 16 Nov. 1945. UNESCO came into being on 4 Nov. 1946. *Director General:* Federico Mayor Zaragoza (Spain).

World Health Organization (WHO): An International Conference, convened by the UN Economic and Social Council, to consider a single health organization resulted in the adoption on 22 July 1946 of the constitution of the WHO. *Headquarters:* 1211 Geneva 27. *Rgl. Offices:* Alexandira, Brazzaville, Copenhagen, Manila, New Delhi, Washington. *Director-General:* Hiroshi Nakajima (Japan).

International Monetary Fund (IMF): The International Monetary Fund was established on 27 Dec. 1945 as an independent international organization and began operations on 1 March 1947. *Headquarters:* 700 19th St. NW, Washington, D.C, 20431. Offices in Paris and Geneva. *Managing Director:* Michel Camdessus (France).

International Bank for Reconstruction and Development (IBRD): Conceived at the Bretton Woods Conference, July 1944, the **'World Bank'** began operations in June 1946. *HQ:* 1818 H. St. NW Washington, D.C. *President:* Lewis Preston (USA).

International Development Association (IDA): A lending agency which came into existence on 24 Sept., 1960. Administered by the World Bank, IDA is open to all members of the Bank.

International Finance Corporation (IFC), an affiliate of the World Bank, was established in July 1956.

President: Lewis Preston (USA).

International Civil Aviation Organization (ICAO): Formed in the international Civil Aviation Conference held in Chicago from 1 Nov. to 7 Dec., 1944. *HQ:* 1000 Sherbrooke St. West, Suite 400, Montreal, Quebec, Canada H3A 2R2. *President:* Dr. Assad Kotaite (Lebanon). *Secretary-General:* Dr. Shivinder Singh Sidhu (India).

Universal Postal Union (UPU) was established on 1 July, 1875, when the Universal Postal Convention adopted by the Postal Congress of Berne on 9 Oct. 1874 came into force. *HQ:* Weltpoststrasse 4, 3000 Berne 15, Switzerland. *Director-General:* A. C. Botto de Barros (Brazil).

International Telecommunication Union (ITU): The International Telegraph Union, founded in Paris in 1865, and the International Radiotelegraph Union, founded in Berlin in 1906, were merged by the Madrid Convention of 1932 to form the ITU. *HQ:* Place des Nations, 1211 Geneva, Switzerland. *Secretary-General:* Dr. Pekka Tarjanne (Finland).

World Meteorological Organization (WMO): Conference of Directors of the International Meteorological Organization (set up in 1873), meeting in Washington in 1947, adopted a convention creating the WMO. *HQ:* Case Postale, No. 2300, CH-1211, Geneva-2, Switzerland. *Secretary-General:* G. O. P. Obasi (Nigeria).

The International Maritime Organisation (IMO) was established as a specialized agency of the UN by the UN Maritime Conference at Geneva in Feb./Mar. 1948. *HQ:* 4 Albert Embankment, London SEI 7SR. *Secretary-General:* Wiliam O'Neil (Canada).

The General Agreement on Tariffs and Trade (GATT) was negotiated in 1947 and came into force on 1 Jan., 1948. In Dec. 1986 there were 92 contracting parties, with a further 31 countries participating under special arrangements.

Headquarters: Centre William Rappard, 154 rue de Lausanne, 1211 Geneva 21, Switzerland.

Director General: Arthur Dunkel (Switzerland).

World Intellectual Property Organisation (WIPO): The Convention establishing WIPO was signed at Stockholm in 1967 by 51 countries, and came into force in April 1970. In Dec. 1974 WIPO became a specialized agency of the UN.

Headquarters: 34, Chemin des Colombettes, 1211 Geneva 20, Switzerland.

Director-General: Arpad Bogsch (USA).

International Fund for Agricultural Development (IFAD): The establishment of IFAD was one of the major actions proposed by the 1974 World Food Conference. The agreement for IFAD came into force on 30 Nov., 1977 following attainment of initial pledges of $1,000 m. and the agency began its operations the following month.

Headquarters: 107 Via del Serafico, Rome, Italy.

President: Idriss Jazainy (Algeria).

International Space Year

The General Assembly of the United Nations has designated 1992 as International Space Year. 1994 will be observed as International Year of the Family.

WORLD ORGANISATIONS

The Asian Development Bank (ADB) was initially sponsored by the ECAFE and started functioning in 1966.

In June 1974, ADB launched the Asian Development Fund (ADF) with a view to providing concessional credits to needy members.

President: Kimimamsa Tarumiza.

Headquarters: Manila.

Amnesty International: A world-wide human rights organization with headquarters in London. The Organization began on May 28, 1961 with a newspaper appeal by the British lawyer Peter Berenson. Now it has more than 500,000 members in more than 150 countries. It won the Nobel Prize for Peace in 1977.

Secretary General: Ian Martin (Britain).

The Arab League is the outcome of a national awakening of the Arabs, following the fall of the Ottoman Empire in the First World War. It was formally instituted on March 22, 1945.

The Arab League consists of a Council, a Secretary General and a few permanent committees.

The League considers itself a regional organization within the framework of the UN at which its Secretary-General is an observer.

Member countries (20): Algeria, Bahrain, Djibouti, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine L.O., Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, UAE, and Republic of Yemen.

Secretariat: After Iraq's invasion of Kuwait in August 1990, the venue was shifted to Cairo.

Secretary General: Chedli Klibi (Tunisia).

The Association of South East Asian Nations (ASEAN) is a regional organization formed by the governments of Indonesia, Malaysia, the Philippines, Singapore and Thailand through the Bangkok Declaration which was signed by the Foreign Ministers of ASEAN countries on 8th Aug., 1967. Brunei joined in 1984. Its aim is to accelerate economic progress and maintain the economic stability of South East Asia.

Each ASEAN capital has an ASEAN National Secretariat. The central secretariat for ASEAN is located in Jakarta, Indonesia, and is headed by the Secretary General, a post that revolves among the member states in alphabetical order every 3 years. Bureau directors and other officers of the ASEAN Secretariat remain in office for 3 years.

Secretary-General: Roderick Yong (Brunei Darussalam).

Headquarters: Jakarta.

Colombo Plan. Founded in 1950 to promote the development of newly independent Asian member countries, the Colombo Plan has grown from its modest beginning as a group of seven Commonwealth nations into an international organization of 26 countries.

Member countries: Afghanistan, Australia, Bangladesh, Bhutan, Myanmar, Cambodia, Canada, Fiji, India, Indonesia, Iran, Japan, Republic of Korea, Lao People's Democratic Republic, Malaysia, Maldives, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand, UK and USA.

Headquarters: Colombo Plan Bureau, 12 Melbourne Avenue, PO Box 596, Colombo 4, Sri Lanka.

The Commonwealth. The 50-nation Commonwealth represents a third of the nations of the world.

The idea of a Commonwealth of Nations comprising Great Britain, the Dominions and other Territories in the British Empire was first accepted at the Imperial Conference of 1926. In 1931, the Statute of Westminister recognised the status of the Domin-

NAM- What For?

Extravagant on rhetoric and feeble on achievement even in its heyday, the Non-Aligned Movement now is without a voice, direction or agenda. Nothing has exposed its debilitated state more dramatically than the meeting of NAM foreign ministers in Belgrade in February 1991. The venue itself was rich in symbolism. Yugoslavia, the current chairman of NAM, has been shaken down to its roots by a series of implosions. Its very existence is under severe challenge. Under the circumstances, to expect it to provide any sort of leadership to NAM would have been tantamount to self-delusion of a particularly besotted kind.

The story behind the rejection (of India's paper) could well be construed as a coroner's report on the NAM cadaver. The Indian paper, entitled the non-aligned peace initiative, was admittedly high on principles; end the war and promote a peaceful solution; protect the civilian population from the devastation and risks of the military operations; conform strictly to the Security Council Resolution 678; involve the Security Council at every phase leading to a negotiated settlement and well beyond; abjure the use of chemical weapons and other weapons of mass destruction.

To judge by the accounts of what transpired at Belgrade the Indian knew in advance that their paper would be summarily dismissed by Washington and perhaps also by Baghdad. Even so they felt that reiteration of the principles and of the peace initiative would vindicate NAM's raison d'etre. Clearly, however, a bulk of the NAM membership thought otherwise.

Thus, Egypt reportedly insisted that nothing short of Iraq's unconditional withdrawal from Kuwait would be acceptable to it. On the other hand, Algeria and the PLO pressed for an early ceasefire as a prelude to the discussions on the withdrawal of all foreign troops while the PLO, naturally sought a linkage between the ceasefire and the Iraqi withdrawal on the one side and steps to resolve the problem of Palestine. As for the Yugoslavs, they seemed reluctant to discuss any NAM peace initiative at all.

Most revealing in this regard has been the conduct of Iran. This country clearly believes that a grievously weakened Iraq will enable it to play a key, if not dominant, role in the region. It will thus ensure that its own margin of manoeuvre is not compromised by merging such initiatives as it wishes to take with those that NAM might propose. In its bid to carve an independent niche for itself it reportedly insisted in Belgrade that the NAM missions to be sent to Washington and Baghdad should consist of representatives of Muslim nations alone; that all statements relative to a negotiated settlement should be announced by President Rafsanjani; that Teheran should be allowed to take the lead in any opening to the U.S.; and, finally, that the post-war security arrangement should provide a larger role for itself even if this is to the detriment of countries like Egypt, Syria, Turkey and Pakistan.

Given the differences of interests and ambitions between Arabs and Muslim nations, between Muslim and non-Muslim nations, between those who tilt heavily on the side of the United States and those who favour, however furtively, to cast their lot with Iraq, it is no wonder that the reflexes of NAM are numbed. Add to this the Soviet hesitation to say or do anything that might upset the U.S.-led alliance and China's unwillingness to rub the United States the wrong way and you have a NAM gripped by acute paralysis in this wider international setting.

This U.N.-centred Indian approach is not at odds with the efforts to multiply bilateral contacts with all countries at all levels. For instance, India and the United States have far too many mutually shared interests – democracy, economic development, keeping religious fundamentalism at bay–for them to be at odds. All this, however, presupposes stable governance in India and, not the least, a foreign policy which does not suffer either from the hangover of the past or from the delusions of the present or indeed from the knee-jerk opportunism that the fear of the emerging uni-polar world might inspire in the future.

*(Excerpts of an article by **Dilip Padgaonkar**, journalist and commentator)*

There is A role For NAM

The fact that there are today hundred and two nations in the non-aligned movement and that countries like the Netherlands and Germany sit as guests at NAM summit meetings shows that there is still something in the movement that responds to the needs of our time. Pragmatic China has declared that it will not "attach" itself to a superpower or enter into military alliances and that it will follow an "independent foreign policy." Recently the Soviet delegate at the UN called for the need for making the non-aligned movement "stronger."

One may speculate if some of the republics of the Soviet Union that become independent may not, in due course, join NAM in order to clinch their independence, and the Soviet Union itself sit one day as an honoured guest at NAM conferences!

One may recall the vision that Jawarhalal Nehru had of a nonaligned world. Declaring the basis of non-alignment as "our area of peace," "a no-war land between the military blocks," he envisaged that more and more nations would join it, including those belonging to NATO and WARSAW alliances. The world has actually been moving in that direction as shown by the ending of the cold war, the dissolution or transformation of the military blocs, the opening of good relations between the USA and the USSR and the advent of a general detente in international relations.

Does this mean that non-alignment has fulfilled its historical purpose and may now exit from the international stage? All one can say is that it has played out its part in the first Act, and that its part in the difficult drama of building a new world order is yet to be enacted.

At the same time, some of the vestiges of the cold war order are yet to be dismantled. While the Warsaw Pact has been disbanded, NATO remains with signs of it being transformed into a predominently political organisation. But the decision to set up under it a rapid deployment force for crisis management in the third world shows its continuing role as a politico-military instrument of the western powers. In any new international set-up responsibility for crisis management and peace-keeping should devolve not upon a military alliance but upon the UN. For putting the UN at the centre of the world stage NAM has a leading role to play. India's proposal to enlarge the Security Council is intended to make this core organ of UN more representative and effective.

In the disarmament measures that are bound to take place following the detente the non-aligned movement can act as the voice of the people of the world. It will have the specific role of linking disarmament to development and also ensuring that the great powers do not make the third world a profitable dumping ground for discarded but deadly arms and equipment.

It has been said that the 21st century will be one of economic warfare. The economically powerful nations and groupings that have emerged will compete and contest among themselves trampling upon the interests and independence of the developing nations. In order to check this danger, to manage the North-South dialogue and South-South co-operation, and to help shape a new international economic order the non-aligned and G-77 will have to work closely together combining politics with economics.

Non-alignment, which stands for protection of the independence and interests of smaller and weaker nations in the context of world co-operation, has a special contribution to make in these new fields. If non-alignment finds itself irrelevant in the face of such vital and immense problems it can only be due to poverty of leadership, lack of unity, and amenability of pressures and blandishments, and not due to absence of a raison d'etre.

(Excerpts from an article by ***K.R. Narayanan****, Former Minister and Diplomat)*

ions and defined the relations of the British Crown to the Dominions. The other territories were entitled to become members of the Commonwealth on attaining full self-government. In 1947, the office of the Secretary of State for Dominions was abolished and the Secretary of Commonwealth Relations assumed charge.

The Commonwealth has no written constitution which regulates its functions. Its members are autonomous countries associated with Britain, equal in status, in no way subordinate to one another in any aspect of their domestic or foreign affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations.

Some of the members like Canada, Australia and New Zealand recognise the Queen as the titular head of their States and have Governors-General appointed by the Queen on the recommendation of the State Cabinets. Some like India and Sri Lanka, who have elected Presidents of their own as Heads of State, recognise the Queen as the Head of the Commonwealth only.

Members of the Commonwealth are represented in other Commonwealth countries by diplomatic officers called High Commissioners in the place of Ambassadors representing non-Commonwealth countries.

Britain's entry into the European Economic Community or the European Common Market in 1972 has not altered the relations of Britain with the Commonwealth countries, while it has increased the opportunities of Commonwealth countries to negotiate advantageous commercial agreements with the EEC. India, Sri Lanka and Bangladesh have already established co-operative commercial agreements with the Community.

Member countries:

Australia, Antigua and Barbuda, Bahamas, Bangladesh, Barbados, Belize, Botswana, Brunei, Canada, Cyprus, Dominica, The Gambia, Ghana, Grenada, Guyana, India, Jamaica, Kenya, Kiribati, Lesotho, Malawi, Malaysia, Maldives, Malta, Mauritius, Namibia (joined in 1990), Nauru, New Zealand, Nigeria, Pakistan (which had withdrawn on Bangladesh's entry in 1971 rejoined in 1989), Papua New Guinea, St. Christopher and Nevis, Saint Lucia, St. Vincent and the Grenadines, Seychelles, Sierra Leone, Singapore, Solomon Islands, Sri Lanka, Swaziland, Tanzania, Tonga, Trinidad and Tobago, Tuvalu, Uganda, United Kingdom, Vanuatu, Western Samoa, Zambia and Zimbabwe

Fiji was expelled from the Commonwealth following military takeover of the country in 1987.

Commonwealth Heads of Governments Meet (CHOGM) has become an important international event. India hosted the summit in 1963 when Prime Minister Indira Gandhi presided over the deliberations. Malaysia hosted the 28th summit in October 1989.

Headquarters: Marlborough House, Pall Mall, London. SW1Y 5HX.

Secretary-General: Emeka Anyaoku (Nigeria).

Council of Europe: In 1948 the 'Congress of Europe', bringing together at The Hague nearly 1,000 influential Europeans from 26 countries, called for the creation of united Europe, including a European Assembly. This proposal, examined first by the Ministerial Council of the Brussels Treaty Organization, then by a conference of ambassadors, was the origin of the Council of Europe, which is, with its 24 member States, the widest organization bringing together all European democracies.

The Statute of the Council was signed at London on 5th May, 1949 and came into force 2 months later. The founder members were Belgium, Denmark, France, Ireland, Italy, Luxembourg, the Netherlands, Norway, Sweden and the UK. Turkey and Greece joined in 1949, Iceland in 1950, the Federal Republic of Germany in 1951 (having been an associate since 1950), Austria in 1956, Cyprus in 1961, Switzerland in 1963, Malta in 1965, Portugal in 1976, Spain in 1977, Liechtenstein in 1978, San Marino in 1988, Finland in 1989 and Hungary in 1990.

Headquarters: Palais de l'Europe, 67006, Strasbourg, Cedex, France.

Secretary-General: Catherine Lalumiere.

Council for Mutual Economic Assistance (COMECON). Founder members were USSR, Bulgaria, Czechoslovakia, Hungary, Poland and Romania. Later admissions were Albania (1949, ceased participation 1961), German Democratic Republic (1950), Mongolia (1962), Cuba (1972), and Vietnam (1978). In 1964 Yugoslavia concluded an agreement with CMEA whereby Yugoslavia would participate in the work of some CMEA bodies (at present 21). Afghanistan, Angola, Ethiopia, Laos, Mexico, Mozambique, Nicaragua and the People's Democratic Republic of Yemen attend CMEA sessions as observers.

Headquarters: Prospekt Kalinina, 56, Moscow, G-205.

Secretary: V. V. Sychev (appointed 1983).

European Coal and Steel Community (ECSC) was created in pursuance of a treaty signed by six countries of Europe, in Paris in 1951. The countries were: France, Belgium, the Netherlands, Luxembourg, Federal Republic of Germany and Italy. The treaty affirmed a closer political union of the six countries and created a common market for coal, iron and steel.

European Economic Community (EEC) commonly known as the ECM—European Common Market—was brought into existence by the Treaty of Rome of March 25, 1957, signed by the six countries of ECSC—France, Belgium, the Netherlands, Luxembourg, Federal Republic of Germany and Italy. Later Britain, Ireland, Denmark and Norway signed the treaty of accession, but Norway withdrew. With

Greece, Spain and Portugal joining later, the EEC now has a membership of 12 countries.

EEC has become the world's largest and most prosperous trading area, with a population of 320 million—larger than that of any superpower.

The Treaty of Rome guarantees certain rights to the citizens of all member states (e.g. the outlawing of economic discrimination by nationality, and equal pay for equal work as between men and women) and sets out certain other areas where secondary legislation is to fill in the details.

European Free Trade Association (EFTA) was formed in 1960, as the result of a convention signed by seven countries of Europe at Stockholm. The countries were UK, Austria, Denmark, Norway, Sweden, Switzerland and Portugal. This Association was formed on the pattern of the EEC and has the same objectives, The seven countries that formed the EFTA were generally called the Outer Seven, in contradistinction to the six countries of the EEC, who were called the Inner Six.

Headquarters: Geneva.

Secretary-General: Georg Reisch (Austria).

The European Free Trade Area (see EEC) has provided common ground for economic co-operation among fifteen European countries—Belgium, France, Germany, Italy, Luxembourg, the Netherlands (original six of EEC), Denmark, Ireland, UK (who joined the EEC in 1972) Austria, Iceland, Norway, Portugal, Sweden and Switzerland (the remaining members of the EFTA).

North Vs South

***The South Commission** opened its headquarters in Geneva, Switzerland, on October 2, 1987.*

Julius Nyerere, former President of Tanzania took over as the first Chairman of the 28-member Commission set up by the Non-Aligned Movement. India's Dr. Manmohan Singh served as the first Secretary General.

Other members include: Cuban Vice President Carlos Rafael Rodriguez, former Jamaican Prime Minister Michael Manley and Ivory Coast businessman Aboubaker Diaby Outta.

"The third-world is disillusioned about the policies imposed by the international financial institutions and creditor governments" said Nyerere at the opening ceremony.

***'The Group of 77'** is another Third World economic grouping. It was founded under the auspices of the UN in 1964 to defend the economic and trade interests of the developing world. It comprises 127 developing countries from Asia, Africa and Latin America. Malaysia headed the group in 1988.*

*The world's most industrialised nations call themselves as **Group of Seven.** They are the United States, Britain, France, Japan, Italy, Canada and the Federal Republic of Germany.*

European Atomic Energy Community (EURATOM) was formed in pursuance of a treaty signed in Rome in 1957 by the six countries who formed the ECSC and the EEC. The work of the EURATOM is controlled by the same organs as those of the EEC. But the executive powers are vested in a commission of 5 members nominated by the Council of Ministers and advised by a Scientific and Technical Committee of 20 members and an Economic and Social Committee of 101 members. All major decisions are, however, taken by the Council of Ministers which is formed of one minister from each member state. The object of the EURATOM is the development of nuclear energy for peaceful purposes.

Headquarters: Brussels, Belgium.

European Parliament is composed of 518 members directly elected from all the 12 member states.

Headquarters: Luxembourg.

European Space Research Organisation (ESRO) was formally established in 1964 to promote collaboration among European States, in space research and technology exclusively for peaceful purposes. The members are Belgium, Denmark, France, West Germany, Italy, the Netherlands, Spain, Sweden, Switzerland and UK. Austria, Ireland and Norway participate as observers.

Headquarters: Paris, France.

French Community is an organisation like the British Commonwealth. It offers to the French overseas territories, which manifest their will to adhere to it, new institutions based on the common idea of liberty, equality and fraternity and conceived with a view to their democratic evolution. This principle was accepted and promulgated by the Constitution of the (Fifth) French Republic which came into force in 1953.

Independent members of the Community are: 1. French Republic, 2. Central African Republic, 3. Republic of Congo, 4. Gabon, 5. Senegal, 6. Chad, 7. Madagascar, and 8. Djibouti.

The International Air Transport Association (IATA) was founded in 1945 to promote safe, regular and economical air transport and to provide a forum for collaboration. At present, there are 40 international airlines (active members) and 19 domestic airlines (associate members).

The Annual General Meeting is the ultimate authority in the Association. The Executive Committee consists of 18 elected members.

Headquarters: Montreal, Canada and Geneva, Switzerland.

INTERPOL: 147-nation Police Commission, established in 1923, to co-ordinate police activities of participating nations with headquarters in Paris. After a terrorist bomb blast in May, 1986, the headquarters was shifted to Lyons.

Secretary-General: Raymond Kendall.

North Atlantic Treaty Organization (NATO): In 1949 the foreign ministers of Belgium, France, Luxembourg, the Netherlands, UK, Canada, Denmark, Iceland, Italy, Norway, Portugal and USA met in Washington and signed the North Atlantic Treaty. Greece and Turkey joined the Treaty in 1952, the Federal Republic of Germany in 1955 and Spain in 1982. Thus NATO is an organization made up of 13 Euopean states, two American states (Canada and USA) and an Asiatic state (Turkey).

The Council is the supreme body of the NATO. It consists of the ministers of member states. The Secretary-General is appointed by and responsible to the Council. The Military Committee is the supreme military body of NATO. It consists of the Chiefs of Staff of member states. In 1966 France withdrew from the Military Committee while remaining a member of the Council.

Headquarters: Brussels, Belgium.

Secretary-General: Manfred Worner (Federal Republic of Germany).

Organization of American States (OAS): The Charter of the OAS was adopted in April 1948, at the ninth International Conference of American States at Bogota, Colombia.

Thirty-two American countries are members of the Organization, with equal rights, each country possessing one vote. The members are: Antigua and Barbuda, Argentina, Bahamas, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Commonwealth of Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Christopher (Kitts) and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Uruguay, Trinidad and Tobago, Venezuela and USA. In Jan. 1962 Cuba was excluded from the OAS at a special meeting held at Punta del Este, Uruguay. Canada decided to join in 1989.

Headquarters: Washighton DC., USA.

Secretary-General: Joao Clemente Baena Soares.

Organisation of Arab Petroleum Exporting Countries (OAPEC): The organisation has 10 members including Egypt which was readmitted in 1989. Other members: Algeria, Baharain, Qatar, Libya, Iraq, Kuwait, UAE, Syria, Saudi Arabia.

Organization of African Unity (OAU) came into being in May 1963, when the heads of 32 African States met at Addis Ababa and signed a charter establishing a common organization for all African states.

Its chief objects are unity and solidarity among African States, elimination of colonialism and defence of the independence of member states. The supereme body in the OAU is the Conference of Heads of States or Governments. The official languages of the Organization are French and English in addition to all the native African Lanugages.

The organization has 50 member-states.

Headquarters: African Unity House, Addis Ababa, Ethiopia. *Chairman:* Hosni Mubarak (Egypt).

Secretary-General: Salim Ahmed Salim (Tanzania).

Organization for Economic Co-operation and Development (OECD) was formed in 1961 to replace the Organization for European Economic Co-operation (OEEC) which was started immediately after the Second World War for the reconstruction of war-ravaged European states. The OEEC was formed in response to an offer of aid from the US Secretary of State Mr. Marshall. This aid, since called the Marshall Aid, was to be used to rehabilitate the economies of European states ruined by the war. A conference of European states was held in Paris in 1948 to accept the proposal.

The OEEC changed its name in 1961 as OECD. The change indicates the altered status of the organization. It is no longer a purely European organization. USA and Canada have joined it as full members. This has made it an international organization. The aims of the reconstituted organization are to achieve the highest possible economic development in member countries and to raise the standard of living. The council consisting of the ministers of the member countries is the supreme body of the organization.

Th member countries are now Australia, Austria, Belgium, Canada, Denmark, FRG, Finland, France, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, UK and USA. Yugoslavia has a special status.

Headquarters: Paris, France.

Organization of Petroleum Exporting Countries (OPEC) was the culmination of a long drawn out tug of war between international oil companies and the petroleum exporting countries. Most of these companies were gigantic cartels controlling production in more than one state. It was in their option to increase or reduce petroleum production in various countries and to manipulate prices. Very often they played one producing country against another by adopting various devices that affected the economy of the producing states without reducing the companies' profits.

The immediate provocation for the formation of the OPEC was provided by the announcement of oil companies that they were reducing the prices of Middle East crude. This meant that the countries concerned would be losing proportionately. A conference called together at Baghdad in 1962 decided to form the OPEC. This conference was attended by the representatives of Iraq, Kuwait, Saudi Arabia (Arab Muslim states), Iran, a non-Arab but Muslim state, and Venezuela, a non-Arab, non-Muslim state in far away South America. These countries at that time controlled 80 per cent of the world oil trade.

Members (1989): Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela. Membership is open to any other country having substantial net exports of crude petroleum, which has fundamentally similar interests to those of member countries.

Headquarters: Vienna, Austria.

Secretary-General: Dr. Subroto.

Red Cross: International Society for relief of suffering in time of war or disaster. International Committee of Red Cross was founded (1863) on advocacy of J. H. Dunant (1828-1910). Delegates from 14 countries adopted Geneva Convention (1864), providing for neutrality of personnel treating wounded etc. Over 100 national Red Cross societies now exist. Awarded Nobel Peace Prize (1917, 1944, 1963).

Headquarters: Geneva.

South Asian Association for Regional Co-operation (SAARC) comprises India, Maldives, Pakistan, Bangladesh, Sri Lanka, Bhutan and Nepal. It was launched following the Dacca Summit in early December 1985. The second Summit was held in Bangalore in 1986, the third in Kathmandu in 1987, the fourth in Islamabad, Pakistan in 1989 and the fifth in Male, Maldives in 1990.

Headquarters: Kathmandu, Nepal.

Secretary-General: Kant Kishore Bhargawa (India).

Warsaw Pact. On 14th May, 1955 the USSR, Albania, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland and Romania signed in Warsaw, a 20-year treaty of friendship and collaboration, after the USSR had (on 7th May) annulled the 20-year treaties of alliance with the UK (1942) and France (1944). This was renewed for another term. It had its headquarters in Moscow.

The Pact was dissolved on April 1, 1991 following changes in international atmosphere. With the cold war thaw and agreements with NATO to reduce conventional forces in Europe, the military protection afforded by the Pact seemed redundant.

The World Council of Churches (WCC) was formally constituted on 23rd Aug. 1948, at Amsterdam, by an assembly representing 147 Churches from 44 countries. By 1989 the member Churches numbered over 300, from more than 100 countries.

The World Council was founded by the coming together of several diverse Christian movements. On 13th May, 1938 at Utrecht a provisional committee was appointed to prepare for the formation of a World Council of Churches. It was under the chairmanship of William Temple, then Archbishop of York.

Presidents: Dr. Marga Buhrig (Switzerland), Most Rev. W. P. K. Makhulu (Botswana), Dame R. Nita Barrow (Barbados), Bishop Johannes Hempel (German Democratic Republic), Dr. Lois Wilson (Canada), Metropolitan Paulos Mar Gregorios (India), Patriarch Ignatios IV (Syria).

General Secretary: Dr. Emilio Castro (Uruguay).

Office: PO Box 2100, 150 route de Ferney, 1211 Geneva 2, Switzerland.

ECONOMIC GLOSSARY

A

Administered prices: Prices which are set consciously by a single decision-taking body, eg. a monopoly firm, a cartel or a government agency rather than being determined by the free play of market forces.

Advanced Countries: States with the highest levels of national income per head. Unlike the developing countries, they have become industrially advanced.

Aggregate demand: The total demand for goods and services in the economy.

Aggregate supply: The total supply of goods and services in the economy available to meet aggregate demand.

Arbitrage: Practice of switching short-term funds from one investment to another in order to obtain the best return. Also the act of buying at the lower price and reselling at the higher price.

Average cost: Production cost per unit of output produced.

Average propensity to consume (APC): For the economy, this is the total value of expenditure on consumption, goods and services divided by the value of national income.

Average propensity to save (APS): The proportion of income of an individual or the whole economy which is not spent on consumption of goods and services, ie, which is saved. It is 1-APC.

B

Balance of payments: A tabulation of the credit and debit transactions of a country with foreign countries and international institutions, drawn up and published in a similar form to the Income and Expenditure Accounts of companies.

Balanced growth: A particular form of growth process of the economy in which all the main economic aggregates-national income, consumption, stock of capital, employment-grow at the same percentage rate over time.

Barter: Direct exchange of goods and services without the use of money.

Base period: The time period used as the base from which to calculate an index number or a growth rate.

Bill of exchange: Here, the drawer makes an unconditional undertaking to pay to the drawee a sum of money at a given date, usually three months ahead.

Birth rate: The average number of live births occurring in a year for every 1000 population.

Black economy: That part of a country's economic activity which is not recorded in the national income accounts, although it does involve the production of goods and services.

Budget: An estimate of income and expenditure for a future period as opposed to an account which records financial transactions.

Bullion: Gold, silver or other precious metal in bulk, ie, in the form of ingots or bars rather than in coin.

Buyer's Market: A market in a situation of excess supply. Buyers are relatively scarce and are able to obtain favourable terms as sellers compete with each other.

C

Capital: The stock of goods which are used in production and which have themselves been produced. Fixed capital consists of durable goods such as buildings, plant and machinery, circulating capital consists of raw materials, semi-finished goods, components, etc.

Capital formation: Net investment in fixed assets, ie, additions to the stock of real capital.

Capital market: The market for longer-term loanable funds.

Capital stock: The total amount of physical capital existing at any one time in a firm, industry or economy.

Capitalism: The politico-economic system, based on private property and private profit, censured by Karl Marx for its exploitation of labour.

Cash flow: The flow of money payments to or from a firm.

Census: A count, usually providing social, demographic or economic information, of the total population of the group studied.

Cheque: An order written by the drawer to a commercial bank or central bank to pay on demand a specified sum to the bearer, a named person or corporation

Clearing house: Any institution that settles mutual indebtedness between a number of organizations.

Closed economy: An economy assumed not to take part in international trade so that it has no exports or imports.

Commission: A percentage or the value of a transaction taken by an intermediary as payment for his services, eg: Broker's commission, estate agency's commission.

Commodity: A particular type of raw material or primary product such as tea, coffee, wool, cotton, rubber, tin, jute and furs.

Complementary demand: Two or more products are said to be complementary in demand when an increase in the price of one is generally associated with a decrease in demand for the other.

Composite demand: The demand for a product which arises from several uses of the product.

Consumer credit: Short-term loans to the public for the purchase of specific goods. Consumer credit takes the form of credit by shopkeepers and other suppliers, credit accounts, personal loans and hire purchase.

Consumer good: A commodity bought by households for use in consumption.

Consumer surplus: The excess of the amount a consumer is prepared to pay for a good over the amount he actually does pay for it.

Consumer's sovereignty: This is said to exist when resources are allocated in line with consumers' preference as opposed to, say, state direction.

Consumption: The total expenditure in an economy on goods and services which are used up with a specified, usually short, period of time, generally a year; the actual physical process of using a good or service.

Convertibility: A currency is said to be convertible when it may be freely exchanged for another currency or gold.

Cost: Opportunity cost concept-value of the alternatives or other opportunities which have to be foregone in order to achieve a particular thing. Outlay concept-total money expenditure or outlays necessary to achieve it.

Credit: Granting the use or possession of goods and services without immediate payment. There are three types of credit: (a) consumer credit; (b) Trade credit and (c) Bank credit.

Currency: Notes and coins that are the 'current' medium of exchange in a country.

D

Dear money: High rates of interest. A 'dear money policy' carried out by a monetary authority would be one of restricting the money supply in the interest of reducing inflation.

Death-rate: The number of deaths occurring in any year for every 1000 of the population.

Debt: A sum of money or other property owned by one person or organization to another.

Deficit: An excess of liabilities over assets, or of an expenditure flow over an income flow.

Deflation: A reduction in the general level of prices.

Demand: The willingness and ability to pay a sum of money for some amount of a particular good or service.

Depression: A severe trough in the business cycle where there is widespread and sustained unemployment.

Derived demand: The demand for a factor of production is said to be a derived demand.

Devaluation: The reduction of the official rate at which one currency is exchanged for another.

Developing country: A country that has not yet reached the stage of economic development characterised by the growth of industrialization, nor a level of national income sufficient to yield the domestic savings required to finance the investment necessary for further growth.

Direct taxation: Taxation on individuals or companies which is paid directly by them or through their employer to the Inland Revenue. In general, direct taxation is levied on wealth or income.

Dishoarding: The running down of stocks of goods or money which have been accumulated by hoarding.

Disinflation: The reduction or elimination of inflation.

Disposable income: Personal income including transfer payments after all direct taxes have been deducted.

Division of labour: The specialisation of workers in particular parts or operations of a production process.

Double taxation: The situation in which the same tax-base is taxed more than once.

Dumping: The sale of a commodity on a foreign market at a price below marginal cost.

Duopoly: The market situation in which there are only two sellers of a particular good or service.

Duopsony: The market situation in which there are only two buyers of a particular good or service.

Durable goods: Consumer goods like washing machines, motor cars TV sets, which yield services or utility over time rather than being completely used up at the moment of consumption.

E

Earnings: The return for human efforts, as in the earnings of labour and the earnings of management.

Economic development: The process of growth in total and per capita income of developing countries, accompanied by fundamental changes in the structure of their economies.

Economic good: Anything, whether a physical commodity or a service which yields utility and which could command a price if bought or sold on a market.

Economies of scale: These exist when expansion of the scale of productive capacity of a firm or industry causes total production costs to increase less than proportionately with output. As a result, long run average costs of production fall.

Elasticity: The measure of degree of responsiveness of one variable to changes in another.

Employment full: The economy is said to be at full employment when everyone who wishes to work at the going wage rate for his type of labour is employed but because it takes time to switch from one job to another there will at any one moment be a small amount of unemployment.

Entrepreneur: The name given in economic theory to the owner-manager of a firm.

Equilibrium: A state in which forces making for change in opposing directions are perfectly in balance so that there is no tendency to change.

Equilibrium price: The price at which a market is in equilibrium.

Estate duty: A tax payable on a person's property at his death and before it passes into the hands of others.

Exchange rate: The price (rate) at which one currency is exchanged for another currency, for gold or Special Drawing Rights.

Excise duties: Taxes levied upon goods produced for home consumption.

Exports: The goods and services produced by one country which are sold to another in exchange for the second country's own goods and services, for gold and foreign exchange or in settlement of debt.

F

Factors of production: According to Marshall, these are 'the things required for making a commodity'. These inputs are grouped into land, labour and capital.

Final products: Goods used by consumers in consumption, rather than by firms as inputs into process of production.

Finance: The provision of money when and where required. Finance may be short term (usually upto one year) medium term (usually over one year upto 5 to 7 years) and long term.

Fiscal policy: That part of government policy which is concerned with raising revenue through taxation and deciding on the level and pattern of expenditure.

Fixed costs: Costs which in the short run do not vary with outputs. These costs are borne even if no output is produced.

Floating debt: Generally, any short-term debt, specifically, that part of the national debt that consists of short-term borrowing.

Foreign aid: The administered transfer of resources from the advanced countries for the purpose of encouraging economic growth in the developing countries.

Foreign exchange: Claims on another country held in the form of the currency of that country or interest-bearing bonds.

Foreign investment: The acquisition by governments, institutions or individuals in one country of assets in another.

Free market: A market in which the forces of supply and demand are allowed to operate unhampered by government regulation or other interference.

Free trade: The condition in which the free flow of goods and services in international exchange is neither restricted nor encouraged by direct government intervention.

Fringe benefits: Rewards for employment over and above the wages and salaries paid.

G

Giffen goods: Goods which do not obey the law of demand, viz., that less is bought as price rises.

Gift tax: A levy on the value of certain property given away to others and paid by the donor.

Gold standard: A country is said to be on the gold standard when its central bank is obliged to give gold in exchange for any of its currency presented to it.

Gross Domestic Product (G.D.P.): A measure of the total flow of goods and services produced by the economy over a specified time period, normally a year. It is obtained by valuing outputs of goods and services at market prices and then aggregating.

Gross National Product (G.N.P.): GDP plus the income accruing to domestic residents arising from investment abroad less income earned in the domestic market accruing to foreigners abroad.

H

Hoarding: The withdrawal of money from active circulation by accumulating it rather than spending it on consumption or buying assets.

Homogeneous products: When the outputs of different firms are undifferentiated and perfect substitutes in the eyes of consumers then the product is said to be homogeneous.

Household: An economic unit which is defined for the purpose of the census of population as a single person living alone or a group voluntarily living together.

Human Capital: The skills, capacities and abilities possessed by an individual which permit him to earn income.

I

Imports: The flow of goods and services which enter for consumption into one country and which are the products of another country.

Inactive money (Idle money): That portion of the total stock of money or money supply (currency plus bank deposits) in existence at any one time which is not being used to finance current transactions or being lent out on the money market.

Income: The flow of money or goods accruing to an individual, a group of individuals, a firm or the economy over some time period.

Income tax: A tax levied on income. It is progressive in its effect.

Inflation: A process of steadily rising prices resulting in diminishing purchasing power of a given nominal sum of money.

International trade: The exchange of goods and services between one country and another.

Investment: Strictly defined, investment is expenditure on real capital goods. However, in everyday language, it is also taken to mean purchase of any asset, or indeed the undertaking of any commitment which involves an initial sacrifice followed by subsequent benefits.

L

Labour: One of the primary factors of production, 'labour' is the collective name given to the productive services embodied in human physical effort, skill, intellectual powers, etc.

Labour-Intensive: A process or product is called labour-intensive if it uses proportionately more labour in its production than the other factors of production.

Laissez-faire: The principle of non-intervention of government in economic affairs.

Land: Land is taken to mean not simply that part of the earth's surface not covered by water but also all the free gifts of nature such as minerals, soil fertility, etc.

Legal tender: That which must be accepted in legal settlement of a money debt.

Letter of credit: An order from a bank to a bank abroad authorizing payment to a person named in the letter of a particular sum of money or upto a limit of a certain sum.

Loan: The borrowing of a sum of money by one person, company, government or other organization from another.

Long-run: In price theory, the long-run is defined as the time period long enough for the firm to be able to vary the quantities of all its factors of production rather than just some of them.

M

Marginal cost: The increase in cost resulting from a small increase in the rate of output of a good or service.

Marginal product: The increase in total output resulting from a small increase in one factor of production, all other factors held constant.

Marginal utility: The increase in total utility of consumption of a good which results from increasing the quantity of the good consumed by one unit.

Market: A market exists when buyers wishing to exchange money for a good or service are in contact with sellers wishing to exchange goods or services for money.

Market forces: The forces of supply and demand which together determine the price at which a product is sold and the quantity which will be traded.

Mixed economy: An economy which contains elements of both private and state enterprise.

Money: Anything which is generally acceptable as a means of settling debts.

Money in circulation (active money): Money which is being used to finance transactions.

Money market: The financial institutions that deal in short-term securities and loans, gold and foreign exchange.

Monopoly: A market situation in which a single seller controls the entire output of a particular good or service.

Monopsony: The situation in which there is only a single buyer in a market.

N

National debt: The total outstanding borrowings of the central government exchequer.

National income: A measure of the money value of the total flow of goods and services produced in an economy over a specified period of time.

Net domestic product: Gross domestic product less depreciation.

Net national product: Gross national product less depreciation.

Non-price competition: Policies which a seller may use to attract customers away from rival sellers, but which do not involve price reduction. The most common of such policies are advertising, use of free gift schemes, etc.

O

Oligopoly: A type of market in which there is a relatively high degree of concentration, ie, a small number of firms account for a large proportion of output, employment, etc.

Open market operation: The purchase or sale of securities by the Central Bank to influence the supply of funds in the capital market, and so interest rates and the volume of credit.

Optimum: The best value which some variable can take with reference to some particular objective.

P

Per capita income: The total income of a group divided by the number of people in the group.

Population: The number of people living in any defined area.

Price: The quantity of money which must be exchanged for one unit of a good or service.

Price discrimination: Practice of charging different prices to different consumers, for the same goods, where the price differences do not reflect differences in cost of supply.

Prime costs: Variable costs plus administrative and other fixed costs that can be avoided in the short or long term if there is no output, even while the firm remains in business.

Private sector: That part of the economy not under direct government control.

Producer's surplus: The excess of the total earnings of a supplier of a good or service over the payment he would require merely to induce him to continue to maintain his current level of supply.

Productivity: A measure of the rate at which output flows from the use of given amount of factors of production.

Profit: a) normal profit—Income which accrues to the entrepreneur ie, the residual left after payment of all opportunity costs to the inputs he employes; b) Super-normal profit—profit over and above normal profit, also referred to as excess profit.

Progressive tax: A tax which takes an increasing proportion of income as income rises.

Proportional tax: A tax which is levied at the same rate, at all income levels.

Public sector: The combination of central government, local authorities, the nationalised industries and public corporations.

Public utility: An enterprise producing and supplying one of a particular set of outputs, namely electricity, transport, gas, telephones and water supply.

R

Rate of interest: The price of borrowed money. It is the difference between what is lent and what must be repaid after a specified period, expressed as a proportion of the amount lent.

Real income: Income measured in terms of the real goods and services it can buy. It can be calculated by dividing money income by a suitable index of prices.

Recession: A downturn in the business cycle characterized by two successive quarters of negative rates of growth in the real GNP.

Regulation: Government policy that monitors and controls the economic activities of certain types of private enterprises.

Resale price maintenance (RPM): The practice whereby a manufacturer requires the distributors of his product to resell at certain prices, or at not less than minimum prices, which he has set for his products.

Reserve currency: A currency which governments and international institutions are willing to hold in their gold and foreign exchange reserves and which finances a significant proportion of international trade.

S

Sales tax: A tax levied as a proportion of the retail price of a commodity at the point of sale.

Saving: Income which is not spent on consumption is, by definition, saved.

Scarcity: A condition where there is less of something the people would like to have if it cost nothing to buy.

Selling costs: Costs incurred in marketing and distributing a product, including the cost of advertising, sales promotion, packaging, salesmen, etc.

Services: Consumer or producer goods which are mainly intangible and often consumed at the same time as they are produced.

Short-run: A time period within which a firm is not able to vary all its factors of production.

Soft-currency: A currency whose exchange rate is tending to fall because of persistent balance of payments deficits or because of the building up of speculative selling of the currency in expectation of a change in its exchange rate.

Soft-loan: A loan bearing either no rate of interest or an interest rate which is below the true cost of the capital lent.

Specie points: The limits between which the exchange rate between two currencies on the gold standard fluctuates.

Speculation: Buying and selling with a view to buying and selling at a profit later when prices have changed.

Subsidy: A payment by a government agency to producers of goods, intended to make prices lower than they otherwise would be.

Substitutes: Two goods are substitutes if a rise in the price of one causes an increase in demand for the other.

Supply: The flow of a good or service into a market which is available to meet demand.

T

Tariffs: Taxes imposed on commodity imports.

Taxation: A compulsory transfer of money (or occasionally of goods and services) from private individuals, institutions or groups to the government.

Technology: The sum of knowledge of the means and methods of producing goods and services.

Terms of trade: The ratio of the index of export prices to the index of import prices.

Trade cycle: Regular oscillations in the level of business activity over a period of year.

U

Unemployment: A situation which exists when members of the labour-force wish to work but cannot obtain a job.

Utility: The satisfaction, pleasure or fulfilment of needs derived from consuming some quantity of a good.

V

Variable costs: Costs which vary directly with the rate of output. Eg: labour costs, raw material costs, etc.

W

Wealth: The wealth of an individual is his total stock of tangible or intangible possessions which have a market value. ❑

Adam Smith Lives Again

It is strange that the world witnessed a revival of interest in Adam Smith after 200 years of his breathing last. Adam Smith is known the world over as the most outstanding English Economist of the eighteenth century lending support and authority to the free enterprise (capitalist) system of economics. His masterpiece The Wealth of Nations *was a sort of Magna Carta for economists from his time onward. He was more than an economist. He was a radical and a revolutionary: a profound thinker and pragmatist. He studied human nature in great depth and in all its intricacies. And he formulated his economic propositions and precepts basing them on the solid rock of human nature and human experience. It is perhaps this dimension of his approach to economic analysis and perception that has made his economics as relevant to us today as it was relevant to his contemporaries 200 years ago.*

Smith was not for unbridled capitalism. He believed that the state had a role, however modest, to play. The state had to prepare the economy and society where individuals could pursue their economic activities unhindered by others.

In Smith's view the role of the individual in economic development is supreme. But in order to realise the salutary effects of individual initiative and enterprise, for both the individual and society, the state had to provide the congenial background through appropriate institutions, in other words, by ensuring the existence of a social, cultural, ethical and legal framework, in which it will be possible that the positive benefit of individual enterprise will benefit society but at the same time reduce the ill effects of the negative characteristics in human behaviour. It is astonishing how his analysis of the economic phenomena still holds its applicability to modern conditions and situations. It holds a lesson to capitalists and modern (reforming) communists alike.

NOBEL PRIZE AND HONOURS

The 1991 Nobel Prize for **Peace** was awarded to Myanmar's (Burmese) opposition leader Mrs. Aung San Suu Kyi who has been under home arrest for more than two years for criticising her government. Mrs. Suu Kyi was commended for her non-violent struggle for democracy and human rights. The Norwegian Nobel committee said, "Mrs. Suu Kyi's struggle is one of the most extraordinary examples of civil courage in Asia in recent decades."

The other award winners for 1991:

Literature: Nadine Gordimer, 68, South Africa's most celebrated political author, for her novels and short stories focussing on the consequences of living under her country's apartheid system of racial separation. "Gordimer writes with intense immediacy about the extremely complicated personal and social relationships in her environment"- the Swedish accademy said. Her novels, many of which were banned by South African Government, include *A World of Strangers* (1958), *The Late Bourgeios World* (1966) and *Burger's Daughter* (1979).

Physics: Pierre-Gilles de Gennes of the College De France in Paris, for discovering that methods developed for studying simple systems can be generalised to more complex forms of matter, particularly to liquid crystals

The Price of The Prize

Alfred Nobel, the wealthy industrialist who invented dynamite, scandalised his Swedish countrymen when he created the Nobel Prizes.

Swedes found out about the prizes only when they read his will after his death in 1896. In the will, he donated the annual income from his fortune—worth about $100 million today–to support the awards, and his critics charged he had been unpatriotic in not reserving the prizes for Sweden, then a poor agricultural country.

Nobel had ordered that "the most worthy shall receive the prize, whether he is Scandinavian or not."

Nobel's relatives contested his home-made will for three years in a futile attempt to get more than the 1 million kronor he left them.

Only 4 per cent of the 530 prizes distributed since 1901 have been awarded to Swedes, but Sweden is the major winner, notes Mr. Stig Ramel, the head of the Nobel Foundation, which was established in 1900 to administer the legacy.

The 1991 winners got the equivalent of $ 1 million (Rs. 2.50 crore) per category.

In 1991 all living prize winners were invited to Stockholm to celebrate the 90th anniversary of the first award in 1901.

and polymers. Mr. De Gennes, born in Paris in 1932, has been called "the Isaac Newton of our time." He has described mathematically how magnetic dipoles, long molecules or molecule chains can, under certain conditions, form ordered states and what happens when they pass from an ordered to a disordered state.

Chemistry: Richard R. Ernst, 58, of Switzerland, for his contributions to the development of the methodology of high-resolution nuclear magnetic resonance (NMR) spectroscopy.

Economics: Ronald Coase, 81, of the University of Chicago, for his discovery and clarification of the significance of transaction costs and property rights for the institutional structure and functioning of the economy. Born in Britain, Mr. Coase's theories are among the most dynamic forces behind research in economic science and jurisprudence today, the Swedish Academy said. His achievements provided legal science, economic history and organisation theory with prowerful impulses and are therefore, highly significant in an inter-disciplinary context.

Medicine and Physiology: Erwin Neher and Bert Sakmann of Germany for their discoveries concerning the function of single ion channels in cells. Mr. Neher, 47, and Mr. Sakmann, 49, are cell physiologists. Mr. Neher works at the Max-Planck Institute of Biophysical Chemistry in Goettingen, Germany and Mr. Sakmann works at the Max-Planck Institute for Medicine Research in Heidelberg, Germany. They contributed to the understanding of the cellular mechanisms underlying several diseases including diabetes and cystic fibrosis.

Here is the list of previous winners:

Peace

1901 Jean H. Dunant (Switzerland) & Frederick Passy (France)
1902 Elie Ducommun and A. Gobal (Switzerland)
1903 Sir W. R. Cremer (England)
1904 Institute of International Law (Belgium)
1905 Bertha Von Suttner (Austria)
1906 L. Roosevelt (US)
1907 E. T. Moneta (Italy) and Louis Renault (France)
1908 K. P. Amoldson (Sweden)
1909 August M. F. & A. Beernaert (Belgium)
1910 International Peace Bureau (Switzerland)
1911 T. M. C. Asser (Holland) & A. H. Fried (Austria)
1912 Elihu Root (US)
1913 H. La Fontaine (Belgium)
1914-16 No Award
1917 International Red Cross (Geneva)
1918 No Award
1919 Woodrow Wilson (US)
1920 Leon Bourgeois (France)
1921 K. H. Branting (Sweden) & Christian L. Lange (Norway)
1922 Fridtjof Nansen (Norway)
1923-24 No Award
1925 Charles G. Dawes (US) & Sir J. A. Chamberlain (England)
1926 Aristide Briand (France) and G. Streseman (Germany)
1927 F. Buisson (France) and Ludwig Quidde (Germany)
1928 No Award
1929 Frank B. Kellogg (US)
1930 Lars O. J. Soderblom (Sweden)
1931 Jane Addams and Nicholas M. Butler (US)
1932 No Award
1933 Sir Norman Angell (England)
1934 A. Henderson (England)
1935 Carl Von Ossietzky (Germany)
1936 C. de S. Lamas (Argentina)
1937 Viscount Cecil (England)
1938 Nansen International Office for Refugees (Geneva)
1939-43 No Award
1944 International Committee of Red Cross (Switzerland)
1945 Cordell Hull (US)
1946 Emily G. Balch and John R. Mott (US)
1947 American Friends Service Committee (USA) & Br. Society of Friends Service Council (England)
1948 No Award
1949 Lord John Boyd-Orr (England)
1950 Ralph J. Bunche (US)
1951 Leon Jouhaux (France)
1952 Albert Schweitzer (France)
1953 George C. Marshall (US)
1954 Office of the U.N. High Commissioner for Refugees
1955-56 No Award
1957 Lester B. Pearson (Canada)
1958 Father G. Henri Pire (Belgium)

A Profile in Courage

The life of Aung San Suu Kyi of Myanmar (Burma), who won the 1991 Nobel Prize for Peace is a profile in courage.

Norway's Nobel Peace Prize committee awarded the Prize to the Myanmar opposition leader for her "civilian courage" and "non-violent organisation" of Myanmar's opposition.

Three short years ago a housewife in Oxford, England, Aung San Suu Kyi was thrust into the leadership of Myanmar's opposition and to world prominence by a combination of heredity and timing.

For more than two years the 1991 Nobel Peace Prize winner has been under house arrest in Yangon, where the powerful military crushed the Myanmar democracy movement in brutal sweeps against protesters and locked up the symbol of resistance.

The daughter of Gen Aung San, the hero of Myanmar's independence from Britain and the founder of the Burmese army, Suu Kyi, 46, appeared destined for a quiet academic life in Britain.

Then in April, 1988, Suu Kyi, the wife of a Harvard Professor and mother of two sons, returned to Myanmar to nurse her dying mother.

Caught up in rapidly expanding protests against the military-dominated, one-party rule that has left resource-rich Myanmar isolated and poverty stricken, Suu Kyi quickly became the focus of the anti-government movement.

Aung San Suu Kyi among admirers

The slim, scholarly woman was suddenly attracting huge crowds as she spoke of the need for democracy and human rights.

The military, however, crushed the democracy demonstrations in August and September, killing hundreds, possibly thousands of people.

Military leaders left a glimmer of hope by promising multi-party democracy and free elections. Suu Kyi was an overwhelming choice to head the most determined of the new parties, the National League for Democracy.

Suu Kyi's calm determination and fearlessness helped keep the party together in the face of mounting military pressure.

Dressed in a simple but elegant silk longyi-a sarong-like dress that is the Myanmar national costume-Suu Kyi faced soldiers pointing their rifles at her, demanding she stop her campaigning.

"Fear is a habit," she told reporters after one incident when she defied the military. "I have spent my life in places where I have not had to be frightened and so I am not afraid."

Fear, she believes, is not the key. Time and again she provoked the junta, with her scathing remarks. She boldly dubbed Gen. Ne Win a "Megalomaniac" in an interview to 'Time' Magazine. Such provocation endangered her life. But she said, "I think about it (being killed). But I'm not preoccupied by it at all. It's funny to say in giggling, but it is not a question that interests me very much."

1959 Philip J. Noel-Baker (England)
1960 A. J. Luthuli (South Africa)
1961 Dag Hammarskjold (Sweden)
1962 Linus C. Pauling (US)
1963 International Red Cross Committee & Red Cross League (Switzerland)
1964 Dr. Martin Luther King (US)
1965 United NationsChildren's Fund
1966-67 No Award
1968 Rene Cassin (France)
1969 International Labour Organisation
1970 Norman Ernest Borlaug (US)
1971 Willy Brandt (Germany)
1972 No Award
1973 Henry Kissinger (US) & Le Duc Tho (Vietnam) (Tho rejected the prize)
1974 Eisaka Sato (Former P.M., Japan), Sean MacBirde (Ireland), UN Commissioner for S.W. Africa, (Namibia)
1975 Andrie Sakharov (USSR)
1976 Betty Williams, Mairead Corrigan and Claron Mckeown (Northern Ireland)
1977 Amnesty International
1978 Anwar Sadat (Egypt) & Menacham Begin (Israel)
1979 Mother Teresa (India)
1980 Adolfo Peren Esquivel (Argentina)
1981 UN High Commissioner for Refugees
1982 Alva Myrdal (Sweden) & Garcia Robles (Mexico)
1983 Lech Walesa (Poland)
1984 Bishop Desmond Tutu (South Africa)
1985 International Physicians for Prevention of Nuclear War (US)
1986 Elie Wisel (US)
1987 Oscar Arias Sanchez (Costa Rica)
1988 UN Peace Keeping Forces
1989 Dalai Lama, Tibetan, living in India since 1959)
1990: Mikhail Gorbachev (USSR).

Physics

1901 W. K. Roentgen (Germany)
1902 H. A. Lorentz and P. Zeeman (Holland)
1903 A. H. Bacquerel, Pierre & Marie Curie (France)
1904 Lord Rayleigh (England)
1905 Philipp Lenard (Germany)
1906 J. J. Thomson (England)
1907 A. A. Michelson (US)
1908 G. Lippmann (France)
1909 G. Marconi (Italy) and F. Braun (Germany)
1910 J. D. Van der Waals (Holland)
1911 W. Wien (Germany)
1912 Gustaf Dalen (Sweden)
1913 H. Kamerlingh-Onnes (Netherlands)
1914 M. von Laue (Germany)
1915 W. H. Bragg and W. L. Bragg (England)
1916 No Award
1917 C. G. Barkla (England)
1918 Max von Planck (Germany)
1919 J. Stark (Germany)
1920 C. E. Guillaume (Switzerland)
1921 A. Einstein (Germany)
1922 Niels Bohr (Denmark)
1923 R. A. Millikan (US)
1924 Karli Siegbahn (Sweden)
1925 James Franck & Gustav Hertz (Germany)
1926 Jean B. Perrin (France)
1927 Arthur Compton (US) & Charles T. R. Wilson (England)
1928 O. W. Richardons (England)
1929 L.V. de Broglie (France)
1930 C. V. Raman (India)
1931 No Award
1932 W. Heisenberg (Germany)
1933 Paul A. M. Dirac (England) & Erwin Schroedinger (Austria)
1934 No Award
1935 J. Chadwick (England)
1936 V. F. Hess (Austria) and C. D. Anderson (US)

1937 C. J. Davisson (US) and G,. P. Thomson (England)
1938 E. Fermi (Italy)
1939 E. O. Lawrence (US)
1940-42 No Award
1943 Otto Stern (US)
1944 Isidor I. Rabi (US)
1945 W. Pauli (Austria)
1946 P. W. Bridgman (US)
1947 Sir E. Appleton (England)
1948 P. M. S. Blackett (England)
1949 Hideki Yukawa (Japan)
1950 C. F. Powell (England)
1951 Sir John Cockcroft (England) and E.T.S. Walton (Ireland)
1952 E. M. Purcell and Felix Bloch (US)
1953 Fritz Zernike (Netherlands)
1954 S. Max Born (England) and Walther Bothe (Germany)
1955 Willis E. Lamb and Ploykarp Kusch (US)
1956 Walter H. Brattain, William Shockley and John Bardeen (US)
1957 Tsung Dao Lee and Chen Ning Yang

(US) (b. China)
1958 Pavel A. Cerenkov, Ilya M. Frank and Igor E. Tamm, (USSR)
1959 Emilio Segre and Owen Chamberlain (US)
1960 Donald A. Glaser (US)
1961 Robert Hofstadter (US) & R. L. Mossabaur (Germany)
1962 Lev. Dr. Landau (USSR)
1963 Eugene P. Wigner (US), Maria Goeppert-Mayer (US) & J. Hans D. Jenen (Germany)
1964 Charles H. Towns (US), Nikolai G. Basov & A. M. Prokhorov (USSR)
1965 Shinichero Tomonaga (Japan), Julian Schwinger & Richard P. Feynman (US)
1966 Alfred Kastler (France)
1967 Hans A. Bethe (FRG)
1968 Luis W. Alvarez (US)
1969 Murray Gell-Mann (US)
1970 Louis Neel (France) and Hannes Alfver (Sweden)
1971 Denis Gabor (Britain)
1972 John Bardeen, John Schneffer, Leon Cooper (all US)
1973 Leo Esaki (Japan), Ivar Giaevar (US), Brian D. Josephson (UK)
1974 Martin Ryle (UK) and Antony Hewish (UK)
1975 James Rainwater (US), Age Bohr (Denmark) and Ben Mottleson (Denmark)
1976 Burton Richter (US), Samuel C.C. Teng (US)
1977 Philip W. Anderson (US), Sir Neville Mott (England), John H. Van Vleck (US)
1978 1. Pyotr Leontevitch Kapitsa (USSR) (Half the Prize amount) 2. Arno A. Penzias (US) 3. Robert W. Wilson (US)
1979 Sheldon S. Glashow (US), Steven Weinberg (US) & Abdus Salam (Pakistan)
1980 James W. Cronin and Val L. Fitch (US)
1981 Nicolaas Blombergen (Holland), Arthur Shawlow (US) & Kai Siegbahn (Sweden).
1982 Kenneth G. Wilson (US)
1983 S. Chandrasekhar (India-born American Professor) and William Fowler (US)
1984 Carlo Rubbia, Simon Van Der Meer (Switzerland)
1985 Prof. Klaus Bon Klitzing (F.R.G.)
1986 Ernst Ruska (F.R.G.), Gerd Binning (F.R.G.) and Henrich Rohrer (Switzerland)
1987 Dr. K. Alex Muller (Switzerland) and Dr. George Bednorz (FRG)
1988 Leon Lederman, Melvin Schwartz and Jack Steinberger (US)
1989 Dr. Norman F. Ramsey (USA), Dr. Hans G. Dehmelt (USA), Dr. Wolfgang Paul (F.R.G.).
1990: Jerome I. Friedman, Henry W. Kendall (both USA) & Richard E. Taylor (Canada).

Chemistry

1901 J.H. Vant Hoff (Holland)
1902 Emil H. Fischer (Germany)
1903 S.A. Arrhenius (Sweden)
1904 Sir W. Ramsay (England)
1905 Adolf von Baeyer (Germany)
1906 Henri Moissan (France)
1907 E. Buchner (Germany)
1908 Ernest Rutherford (England)
1909 Wilhelm Ostwald (Germany)
1910 Otto Wallach (Germany)
1911 Marie Curie (France)
1912 F.A.V. Grignard and P. Sabatier (France)
1913 Alfred Werner (Switzerland)
1914 T.W. Richards (England)
1915 R. Willstatter (Germany)
1916-17 No Award
1918 Fritz Haber (Germany)
1919 No Award
1920 Walther Nernst (Germany)
1921 Frederic Soddy (England)
1922 F.W. Aston (England)
1923 Fritz Pregl (Australia)
1924 No Award
1925 R.A. Zsigmondy (Germany)
1926 T. Svedberg (Sweden)
1927 H. Wieland (Germany)
1928 Adolf Windaus (Germany)
1929 A. Harden (England) and H. von Euler Chelpin (Sweden)
1930 Hans Fischer (Germany)
1931 Kal Bosch and Friedrich Bergius (Germany)
1932 Irving Langmuir (US)
1933 No Award
1934 Harold C. Urey (US)
1935 Frederick & Irene Joliot-Curie (France)
1936 Peter J.W. Debye (Germany)
1937 Walter N. Haworth (England) and Paul Karrer (Switzerland)
1938 R. Kuhn (Germany)-declined
1939 Adolf F.J. Butenandt (Germany)-declined-and Leopold Ruzicka (Switzerland)
1940-42 No Award
1943 G.H. De Heves (Hungary)
1944 Otto Hahn (Germany)
1945 Arturi I. Virtanen (Finland)
1946 J.B. Sumner, W.M. Stanley and J.H.

Nadine Gordimer– Novelist with a Cause

The awarding of the Nobel Prize for Literature to Nadine Gordimer of South Africa in 1991 has been interpreted as a symbolic gesture of support to the Black cause by the collective conscience of humanity. This is the second time that the world's most prestigious award goes to their cause. In 1986 South Africa's most militant Bishop Desmond Tutu won the prize for Peace.

Though Gordimer is not a vociferous critic of the White minority rule, the backdrop of her novels includes the Sharpville massacre of 1960 and the Soweto revolt of 1976 thereby sharply focussing on the political cauldron in which she finds herself. She proves that she is really concerned with "humanity in all its forms, human consciousness in all its mystery" and that makes her one of the leading novelists of the 20th century.

The longing for self-hood, then, has been the central theme of Gordimer's novels, short stories and political writings with the message loud and clear: a collective conscience was needed to bring about a change and not to write about it was somehow to collaborate with the State's continued existence and to become part of the Problem itself. But for the cause to triumph in a society that had "got accustomed to its own restrictions as part of its own violence" was not easy as the white lawyer says in one of Gordimer's earlier novels "A World of Strangers:" "Oh, it's not that I don't want to talk about anything. But you must understand that you are in a country where there are all sorts of different ways of talking about rather dealing with this thing. One of the ways is not to talk about it at all. Not to deal with it at all. Finished. That's possible you know: you'll find out."

For the liberation then, private desires have to be kept out, or preferably not allowed to exist at all, by those who cry freedom but is it possible in real life with its loves and hates, passions and desires and the uncertainties of day-to-day life? So, while freedom remains the central theme of all of Gordimer's writings, she constantly explores the lerrain where personal interests, desires and ambitions encounter the demands and trials of a politically active life.

As a member of the privileged white community of Johannesburg and also a Marxist activist, Gordimer was uniquely placed to watch the South African scene and the precarious moral dilemmas of her kind.... "the white intelligentsia that abhors apartheid the exploitation of 25 million unenfranchised, economically vulnerable citizens at the hands of five million people who, so far, have had a powerful army at their disposal, not to mention the wealth of vigorous, advanced capitalist society." All her novels bear witness to the growing tentacles of apartheid, "the pact between capitalism and racism.." the dilemmas that liberals are pushed into by the encroaching State and finally the point when the crucial decision to 'take to the streets' is reached.

Gordimer, who is deeply influenced by the great Russian masters of the 19th century (her mother was a Latvian) says repeatedly that everything in life is "ambiguous" because "people may know what they want but not who they are." And even when they know who they are, there are no certainties how they would behave because often life came in the way.

Influenced by classical Marxism and yet not dominated by it. Gordimer quotes the Marxist scholar, Federic Jameson, in "Marxism and Form" that "it was easier to write the history of matter than of consciousness." The novelist, who is never freed of the past, has to make use of history but to put flesh and blood into it, he has to draw on the imagination to provide a "history from the inside."

"Whites among themselves are shaped by their peculiar position, just as black people are shaped by theirs. I write about their private selves; often, even in the most private situations, they are what they are because their lives are regulated

Winners all: *Octavio Paz, Mexican (1990), Camilo Jose Cela, Spanish (1989), Naguib Mahouz, Egyptian (1988), Joseph Brodsky, Soviet-born American (1987), Wole Soyinka, Nigerian (1986).*

and their mores are formed by the political situation. You see, in South Africa, society is the political situation. To paraphrase, one might say (too often) politics is character in South Africa.

Because the individual finally succumbs to historical forces, the question often asked is whether all Gordimer's characters are stereotypes who "give in." They are not; they are drawn from her observations of life at large, they have their own personalities and idiosyncrasies, they explore their capacities as far as "the situation" allows. But they remain, in the end, "the subjects of history." In her earlier novels like "Burger's Daughter,' 'A Guest of Honour,' 'The Late Bourgeois World,' 'July's People' and later in "A Sport of Nature,' Gordimer relentlessly examines her own kind and by implication, all those who share her colour and status in countries less dramatically split.

In her latest novel, 'My Son's Story' published late last year, she examines the dilemmas that confront the blacks which are, at heart, very much like those that afflict the affluent whites: how to measure up in one's daily, personal life to one's avowed ethical and political principles, one's activist's sentiments and commitments. There are psychological themes of betrayal and disenchantment built into the novel- as there are in all her novels and short stories-but the basic message is clear: we are shaped and governed by the vast impersonal forces of history and the individual, in the final analysis, counts for little.

Because so much of South African history provides the material for her novels-'History from inside' as Gordimer repeatedly says-you would not really have to know what happened under apartheid. All the shifts and changes of the last 30 years have been intertwined with the personal and political in her novels that bring history out alive.

Given Gordimer's commitment, the charge that she is a communist, writing political tracts to "raise mass consciousness" is an easy one to stick. But her basic commitment is to her art, quoting Gabriel Garcia Marquez that "a writer's duty–his revolutionary duty, if you like–is to write well." In 'The Essential Gesture,' a collection of her pieces on 'Writing, Politics and Places,' she alludes to those South African writers who wear their anti-racism on their sleeves and produce "courageous" anti-apartheid novels that in reality are banal and badly written. Agitprop was not enough in the end; strenuous advocacy of liberal values was not sufficient. "Commitment flows hugely as the sea. What is important is the emergence of art," she adds.

Many writers, constricted by censorship on the one side and the orthodoxy of the antimode on the other, have never developed the ability to deal with anything outside what the events and emotions of their historical situation prescribed.... Solidarity criticism was not enough..... Writing in the battle dress would now have to give way to the larger themes of life which is what literature is all about.

Political themes are common to Nadine Gordimer but they enrich, not mould her fiction. If a writer is fired by a political vision, then in fiction Gordimer says the content must be shaped by form, the message adulterated by art-that is the writer's duty and it is nowhere better exemplified than in her novels and short stories. Never before was the Nobel Prize more richly deserved.

Some Nadine Gordimer writings:

Novels

A World of Strangers, A Guest of Honour, The Conservationist, Burger's Daughter, The Late Bourgeois World, July's People, A Sport of Nature, My Son's Story, Jump (forthcoming).

Short Story collections

The Soft Voice of the Serpent, Friday's Footprint, Livingstone's Companions, No Place Like: Selected Stories, A Soldier's Embrace, Something Out There.

Other writings

The Essential Gesture: Writing, Politics and People.

Northrop (US)
1947 Sir Roberto Robinson (England)
1948 Arne W.K. Tiselius (Sweden)
1949 William F. Giauque (US)
1950 Otto Diels & Kurt Alder (Germany)
1951 Edward M. McMillan & Glen t. Seaborg (US)
1952 Archer J.P. Martin & Richard L.M. Synge (England)
1953 Herman Staudinger (Germany)
1954 Linus C. Pauling (US)
1955 Cincent du Vigneaud (US)
1956 Sir Cyril Hinshelwood (England) Nikolai N. Semenov (USSR)
1957 Sir Alexander Todd (England)
1958 Frederick Sanger (England)
1959 Jaroslav Heyrovsky (Czechoslovakia)
1960 Williard F. Libby (US)
1961 Melvin Calvin (US)
1962 Max F. Perutz & C. Kendrew (England)
1963 Karl Ziegler (W. Germany) & Giulio Natta (Italy)
1964 Dorothy C. Hodgkin (England)
1965 Robert B. Woodward (US)
1966 Robert S. Mulliken (US)
1967 Manfred Eigen (East Germany), Ronald G.W. Norrish (U.K.) and George Porter (UK)
1968 Lars Onsager (US)
1969 Derek H.R. Barton (England) and Odd Hassel (Norway)
1970 Luis F. Leloir (Argentina)
1971 Gerhard Herzberg (Canada)
1972 Christian B. Anfinsen, Stanford Moore & William H. Stein (US)
1973 Ernst Otto Fischer (W. Germany), Geoffrey Wilkinson (UK)
1974 Paul J. Flory (US)
1975 John Warcup Cornforth (Britain) Vladimir Prelog (Switzerland)
1976 William N. Lipscomb (US)
1977 Ilya Prigogine (Belgium)
1978 Peter Mitchell (Britain)
1979 Herbert C. Brown (US) & George Witting (W. Germany)
1980 Paul Berg (US), Walter Gilbert (USA) & Frederick Sanger (Britain)
1981 Kenichi Fukui (Japan) & Roals Hoffmann (US)
1982 Aaron Klug (Britain)
1983 Prof. Henry Taute (US)
1984 R. Bruce (US)
1985 Herbert A. Hauptman and Jerome Karle (US)
1986 Dudley R. Herschbach (US), John Charles Polanyi (Canada) and Yuan Tesh Ltd Lee (Taiwan)
1987 Dr. Donald J. Cramond and Dr. Charles J. Pedersem (both of US)
1988 Johann Deisenhofer, Robert Huber and Hartmut Michel (all of FRG)
1989 Sydney Altman (USA), Thomas Cech (USA)
1990: Elias James Corey (USA).

Medicine & Physiology

1901 E.A. Von Behring (Germany)
1902 Sir Ronald ross (England)
1903 N.R. Finsen (Denmark)
1904 Ivan P. Pavlov (Russia)
1905 Robert Koch (Germany)
1906 S. Ramon Cajal (Spain) and Camillo Golgi (Italy)
1907 C.L.A. Laveran (France)
1908 Paul Ehrlich (Germany) & E. Metchnikoff (France)
1909 T. Kocher (Sweden)
1910 A. Kossel (Germany)
1911 A. Gullstrand (Sweden)
1912 Alexis Carrel (US)
1913 Charles Richet (France)
1914 R. Barany (Austria)
1915-18 No Award
1919 Dr. Bordet (Belgium)
1920 August Krogh (Denmark)
1921 No Award
1922 A.V. Hill (England) and Otto Meyerhof (Germany)
1923 Frederic G. Banting and J.J.R. MacLeod (Canada)
1924 W. Einthoven (Holland)
1925 No Award
1926 Johannes Fibiger (Denmark)
1927 J. Wanger-Jauregg (Austria)
1928 Charles Nicolle (France)
1929 Sir F.G. Hopkins (England) and C. Eijkman (Holland)
1930 Karl Landsteiner (US)
1931 Otto H. Warburg (Germany)
1932 Sir C.S. Sherrington & E.D. Adrian (England)
1933 T.H. Morgan (US)
1934 G.R. Minot, W.P. Murphy & G.H. Whipple (US)
1935 Hans Spemann (Germany)
1936 Sir Henry D. Dale (England) and Otto Loewi (Austria)

1937 A. Szent-Gyorgyi (Hungary)
1938 C. Heymans (Belgium)
1939 G. Domagk (Germany)-declined
1940-42 No Award
1943 C.P. Henrik Dam (Denmark) and Edward A. Doisy (US)
1944 Joseph Erlanger and Herbert Gasser (US)
1945 Sir Alexander Fleming, Sir Howard w. Florey (England) and E.B. Chain (Germany)
1946 Herman J. Muller (US)
1947 Carl F. and Gerty T. Cori (US) & Bernardo A. Houssay (Argentina)
1948 Paul Mueller (Switzerland)
1949 Walter R. Hess (Switzerland) & Antonio C. A. F. Moniz (Portugal)
1950 Edward C. Kendall, Philip S. Hench (US) & T. Reichstein (Switzerland)
1951 Max Theiler (US-b Africa)
1952 S.A. Waksman (US)
1953 Hans A. Krebs (England) & Frits A. Lipmann (US)
1954 J.F. Enders, F.C. Robbins & T.H. Weler (US)
1955 A.H.T. Theorell (Sweden0
1956 Andre F. Cournand, D.W. Richards (US) & Dr. W. Forssmann (Germany)
1957 Daniel Bovet (Italy)
1958 G.W. Beadle, Joshua Lederberg & E.L. Tatum (US)
1959 Servo Ochoa & Arthur Kornburg (US)
1960 Sir M. Burnet (Australia) & Peter B. Medawar (England)
1961 George von Bekesy (US)
1962 Francis H.C. Circk (England), Maurice H.F. Wilkins (England) and James D. Watson (US)
1963 Sir John C. Eccles (Australia), Andrew F. Huxley & A.L. Hodgkin (England)
1964 Konard E. Bloch (USA) & Feodor Lynen (W. Germany)
1965 Francois Jacob, Andre Lwoff & Jacques Monod (France)
1966 Francis P. Rous & Charles B. Huggins (US)
1967 Ranger Granit (Sweden), Haldon Keffer Hartline and George Wald (US)
1968 Dr. Hargovind Khorana (US) (b. India), Robert W. Holley & Marshall W. Nirenberg (US)
1969 Dr. Max Delbruck (US), Dr. Alfred D. Hershey (US), Dr. Salvador Luria (US)
1970 Sir Bernard Katz (England), Dr. Ult von Euler (Sweden), Dr. Julis Axelrod (US)
1971 Dr. Eare Wilbur Sutherland (US)
1972 Gerald Edelman (US), Rodney Porter (Britain)
1973 Karl Von Frisch (W. Germany), Zacharias Lorenz (Austria), Nicholas Tinbergen (Netherlands)
1974 Albert Claude (Luxembourg), George E. Palade (Hungary), Christian de Duve (Belgium)
1975 David Baltimore (US), Renato Dulbecco (Britain), Howard M. Temin (US)
1976 Baruch S. Blumberg (US), D. Carleton Gajdusek (US)
1977* Rosalyn S. Yalow (US), Andrew V. Schally (US) and Roger Gullemin country.
1978 Werner Arber (Switzerland), Daniel Nathans (US) and Hamilton O. Smith (US)
1979 Godfrey Hounsfield (Britain), Allan McCormach (US)
1980 Buruf Benacerraf (US), George Snell (US), Jean Dausset (France)
1981 Roger Sperry, David Hubel (US) & Torsten Wiesel (Sweden)
1982 Sune Bergstroem, Bengt Samuelson (Sweden) and John R. Vane (Britain)
1983 Dr. Barbara McClintock (England)
1984 Dr. Niels Jerne (Denmark), Dr. George Koehler (W. Germany), Dr. Cesar Milstein (Argentina)
1985 Michael S. Brown and Joseph Goldstein (US)
1986 Stanley Cohen and Rita Levi-Mondalcini (US)
1987 Dr. Susumu Tonegawa (Japan)
1988 James Black (UK), Gertrude Elias and George Hitchings (both US)
1989 Dr. J. Michael Bishop (USA), Dr. Harold E. Varmus (USA)
1990: Harry Markowitz, Merton Miller and William Sharpe (all USA).

Economics

1969 Ragner Frisch (Norway) & Jan Tinbergen (Holland)
1970 Dr. Paul A. Samuelson (US)
1971 Simon Kuznets (US)
1972 John R. Hicks (Britain) & Kenneth J. Arrow (US)
1973 Wassily Leontief (US)

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* Half the Prize amount went to Rosalyn Yalow, who incidentally, is the 6th woman to receive a Nobel Prize in the sciences, the other half was shared equally by Roger Gullemin and Andrew Schally.

Indians Who Won The Prize

Rabindranath Tagore (1861-1941):

Author and educator. Founded Shantiniketan (1901) which later became Vishwabharati University. Tagore wrote love lyrics. 'Gitanjali' and philosophical 'Sadhana' are important works. India's national anthem was written by Tagore. Awarded Nobel Prize for literature in 1913.

C.V. Raman (1888-1970): *Physicist. Raman was born at Thiruvanaikkaval near Tiruchirappilly in Tamil Nadu. Educated in Presidency College, Madras. Married to Lokasundari. Awarded Nobel Prize for Physics in 1930 for his study of the scattering of light. Popularly known as 'Raman Effect', the theory describes change in the frequency of light passing through transparent medium.*

Hargobind Khorana (b. 1922): *Now an American citizen, was born in Raipur, Punjab, now in Pakistan. He is married to a Swiss. He took his Ph.D. in Chemistry from the University of Liverpool and in 1960 joined the University of Wisconsin. Khorana was awarded Nobel Prize for Medicine in 1968 for the interpretation of genetic code and its function in protein synthesis.*

Mother Teresa (b. 1910): *Was born to Albanian parents in Skoplji, Yugoslavia and baptized Agnes Gonxha Bojaxhin. She came to India when she was 18 and took up teaching. She established a new congregation, 'Missionaries of Charity', which was approved by Vatican in 1950. Mother Teresa became an Indian citizen in 1948. She was awarded Nobel Prize for Peace in 1979.*

Subramanian Chandrasekhar (b. 1910): *Now an American citizen, was born at Lahore, now in Pakistan. He was educated in Presidency College, Madras. Nobel laureate C.V. Raman was his uncle. Married to Lalitha, who is also a Physicist. Awarded Nobel prize for Physics in 1983 for what is known as 'Chandrasekhar's Limit', which determines the minimum mass of a dying star enabling it to survive.*

1974 Gunnar Myrdal (Sweden) & Friedrich A. Von Hayek (Austria)
1975 Leonid V. Kantarovich (USSR), Tjalling C. Koopmans (US)
1976 Milton Freidman (US)
1977 Berti Ohlin (Sweden) & James E. Meade (England)
1978 Herbert A. Simon (US)
1979 Theodore Shulze & Sir Arthur Lewis (US)
1980 Lawerence Klein (US)
1981 James Tobin (US)
1982 George Stigler (US)
1983 Gerard Debreu (US)
1984 Sir Richard Stone (Britain)
1985 Franco Modigilani (US)
1986 James McGill Buchanan (US)
1987 Robert M. Solow (US)
1988 M. Maurice Allais (France)
1989 Trygve Haavelmo (Norway)
1990: Dr. Joseph E. Murray & Dr. E. Donnall Thomas (USA)

Literature

1901 Rene F.A. Sully-Prudhomme (France)
1902 T. Mommsen (Germany)
1903 B. Bjornson (Norway)
1904 F. Mistral (France) and Jose Echegaray (Spain)
1905 H. Sienkiewicz (Poland)
1906 Giosue Carducci (Italy)
1907 Rudyard Kipling (England)
1908 R. Eucken (Germany)
1909 Selma Lagerlof (Sweden)
1910 Paul J.L. Heyse (Germany)
1911 M. Maeterlinck (Belgium)
1912 G. Hauptmann (Germany)
1913 Rabindranath Tagore (India)
1914 No Award
1915 Romain Rolland (France)
1916 V. Heidenstam (Sweden)
1917 Karl Gjellerup and H. Pontoppidan (Denmark)
1918 No Award
1919 Carl F.G. Spitteler (Switzerland)
1920 Knut Hamsun (Norway)
1921 Anatole France (France)
1922 J. Benavente Martinez (Spain)
1923 W.B. Yeats (Ireland)
1924 L.S. Reymont (Poland)
1925 G.B. Shaw (England)
1926 Grazia Deledda (Italy)
1927 Henri Bergson (France)
1928 Sigrid Undset (Norway)
1929 Thomas Mann (Germany)
1930 Sinclair Lewis (US)
1931 Erik A. Karlfeldt (Sweden)
1932 John Galsworthy (England)
1933 Ivan G. Bunin (USSR)
1934 Luigi Pirandello (Italy)
1935 No Award
1936 Eugene O Neil (US)
1937 R.M. du Gard (France)
1938 Pearl S. Buck (USO
1939 F.E. Sillanpaa (Finland)
1940-43 No Award
1944 J.V. Jensen (Denmark)
1945 Gabriela Mistral (Chile)
1946 Hermann Hesse (Switzerland)
1947 Andre P.G. Gide (France)
1948 T.S. Eliot (England)
1949 William Faulkner (US)
1950 Bertrand Russel (England)
1951 Par Lagerkvist (Sweden)
1952 Francois Mauriac (France)
1953 Sir Winston S. Churchill (England)
1954 Ernest Hemingway (US)
1955 Halldor K. Laxness (Ireland)
1956 Juan R. Jiminez (Spain)
1957 Albert Camus (France)
1958 Boris L. Pasternak (USSR)
1959 Salvatore Quasimodo (Italy)
1960 Saint John Perse (France)
1961 Ivo Andric (Yougoslavia)
1962 John Steinback (UK)
1963 Giorgos Seferis (Greece)
1964 Jean-Paul Sartre (France) (Satre rejected the prize)
1965 Mikhail Sholokhov (USSR)
1966 Samuel J. Agnon (Israel) & Nelly Sachs (Sweden)
1967 Miguel Angel Asturias (Guatemala)
1968 Yasunari Kawabata (Japan)
1969 Samuel Beckett (Ireland)
1970 Alexander Solzhenitsyn (USSR)
1971 Pablo Neruda (Chile)
1972 Heinrich Boell (Germany)
1973 Patrick White (Australia)
1974 Eyvind Johnson & Hary Edmund Martuson (Sweden)
1975 Eugento Montale (Italy)
1976 Saul Bellow (US)
1977 Vincente Aleixander (Spain)
1978 Issac Bashevis Singer (US)
1979 Odysseus Elytis (Greece)
1980 Czeslaw Milosz (Poland)

1981* Elias Canetti (Bulgaria)
1982 Gabriel Garcia Marquez (Colombia)
1983 William Golding (Britain)
1984 Jaroslav Seifert (Czechoslovakia)
1985 Claude Simon (France)
1986 Wole Soyinka (Nigeria)
1987 Joseph Brodsky (Soviet poet living in the US)
1988 Naguib Mahfouz (Egypt)
1989 Camilo Jose Cela (Spain)
1990: Octavio Paz (Mexico)

Magsaysay Awards

An Indian dramatist who introduced modern films and plays to rural audiences won the Ramon Magsaysay award for journalism, literature and creative communication arts in 1991.

K.V. Subbanna won it for enriching the cultural life of the people of Heggodu town in Karnataka. After graduating from Mysore University, Subbanna returned to his home town of Heggodu and brought fresh ideas to Ninasam, a theatre group his father had founded.

Under his leadership, Ninasam's repertoire combined local language renditions of Shakespeare, Moliere and Brecht with new plays by Indian playwrights.

The group later introduced modern film classics, helping to bridge the gulf between urban and rural culture.

Playing many parts in his time, Subbanna, 59, crafted traditional Indian myths and tales into new plays that probe modern issues.

Following Ninasam's example and with its practical asistance, local theatre companies are now coming to life in many rural districts.

Magsaysay Awards were instituted in 1958 in memory of Raman Magsaysay, a former Philippine president . He introduced a land reform programme to defuse a communist insurgency in the 1950s. He was killed in a plane crash in 1957.

No awards were given in 1990. Each of the winners receives a gold medallion and $ 30,000 (about Rs. 7,50,000).

Among those who won the award are the following Indians:

International Understanding: Mother Teresa (1962);

Journalism, Literature and Creative Communication Arts: Amitabha Chowdhury (1961), Satyajit Ray (1967); B.G. Verghese (1975); Sambhu Mitra (1976); Gour Kishore Ghosh (1981); Arun Shourie (1982), R.K. Laxman (1984), K.V. Subbanna (1991).

Community Leadership: Acharya Vinoba Bhave (1958), Dara N. Khurody; Tribhuvandas K. Patel and Verghese Kurian (1963), Kamaladevi Chathopadhyay (1966), M.S. Swaminathan (1971), Ela R. Bhatt (1977), Rajankant S. Arole and Mabelle R. Arole (1979).

Public Service: Jayaprakash Narayan (1965), M.S. Subbulakshmi (1974); Manibhai Phimbai Desai (1982); Muralidhar Devidas Amte (1985); Lakshmi Chand Jain (1989).

Government Service: C.D. Deshmukh (1959).

Literature:

Jnanpith Award: 1990 (Rs. 2 lakh). Prof. Vinayak Krishna Gokak, Kannada writer, for his poems and literary criticism published during 1970-1984. His works include *Ijjodu, Navya Kavitagalu, Dyava Prithvi* and *Bharata Sindhu Rashmi.*

Following is the list of previous recipients: 1965 Mahakavi Sankara Kurup: *Odakuzhal;* 1966 Tara Shankar Banerji: *Ganadevata;* 1967 Dr. K.V. Puttappa: *Ramayana Darsanam;* Uma Shankar Joshi: *Nishit;* 1968 Sumitranandan Pant: *Chidambaram;* 1969 Firak Ghorakhpuri: *Gul-a-Ngma;* 1970 Dr. V. Satyanarayana: *Ramayana Kalapavirkshana;* 1971 Bishnu Dey: *Smithi Sattha Bhavisvath;* 1972 Ramdhari Singh Dinakar: *Urvasi:* 1973 D.R. Bhendhre: *Nakuthanthi;* Gopinath Mohanti: *Madimadal;* 1974 V.S. Khandhekhar: *Yayathi;* 1975 P.V. Akilandam: *Chitirappavai;* 1976 Ashapuran Devi: *Pradhama Prathi Shruti;* 1977 Dr. K. Shivaram Karanth: *Mukajia Kanakasugala;* 1978 S.H. Valsyayan: *Kitni Navom Me Kitnibar;* 1979 B.K. Battacharya: *Mrutunjaya;* 1980 S.K. Pottekkat: *Oru Desathinte Katha;* 1981 Amrita Pritam: *Kagaz ke Kanwas;* 1982 Mahadevi Verma: *Yama;* 1983 Dr. Masthi Venkateswara Iyenkar: *Chikkaveera Rajendra;* 1984: Thakazhi Sivasankara Pillai: *Kayar* and other novels; 1985: Pannalal Patel: *Manvini Bhavai;* 1986: Sachidananda Routroy, Oriya: *Kavita,* Baji Rout and other poetical works; 1987: V.V. Shirwadker, Marathi: Popularly known as *Kusumagraj* for his poetical & other works; 1988: Dr. C. Narayana Reddy for his poetical works; 1989: Ms Qurratul-ain Haider, Urdu writer for her works including the novels *Aag Ki Dariya* and *Pathar Ki Awaz*.

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* Born in Bulgaria but living in London and writing in German.

Indian Publishing Hall of Fame: by the institute of Book Publishing: Kushwant Singh, Narendra Kumar, Shanti Lal Jain, P.S. Jayasinghe (postumous) and Sitaldas Primlain (Postumans).

Raja Sir Literary Award: Rs. 50,000: Mi Pa Somu, Tamil poet.

Raja Lakshmi Award by Sri Raja Lakshmi Foundation, Madras: Rs. 10,000. Dr. Beyi Bheemanna.

Booker Prize for Fiction: Ben Okri, Nigeria, for his novel *The Famished Road*. £ 20,000.

Science

Honda Prize for 1991 by the Honda Foundation, Japan. Ten million Yen (about Rs. 18 lakhs). Dr. M.S. Swaminathan, India's agricultural scientist for his leadership in the solution of Asia's food problem. Dr. Swaminathan is the former Director General of Indian Council of Agricultural Research and subsequently Director of the International Rice Research Institute (IRRI) in Manila. The 66-year old Dr. Swaminadhan who is presently the President of the International Society for Mangrove Ecosystem was praised for his leadership during the "green revolution" which averted a deep food crisis in the Indian subcontinent in the Sixtees and early Seventees.

M.S. Swaminathan: Year of accolades

The Honda Foundation was established in 1977 with a donation made by the late Seichiro Honda, founder of Honda Motor Company, with the purpose of promoting harmony between nature and technology.

Tyler Prize: 1991 for environmental achievements $ 150,000 (about Rs. 29 lakhs). shared by Dr. M.S. Swaminathan of India and Dr. C.Everett Koop, father of the anti-smoking revolution in America.

Kalinga Prize: 1991 By UNESCO for the popularisation of science. £ 1000 (Rs. 40,000). Won jointly by Dr. N.K. Schgal of India and Dr. Rada Iftimovici of Romania. Dr. Sehgal, Director of the National Council for Science, Technology and Communication, New Delhi, played an active role in the massive experiments in science communication in 1987- Bharat Jan Vigyan Jatha which directly reached ten million across the country. Kalinga Award was established by the Kalinga Foundation and first presented in 1952. The 1990 Kalinga Prize was won by Prof. Misbanudhin Shami, Chairman, Pakistan Science Foundation.

Dhanvantari Award: 1991 for outstanding contribution to Medical Sciences, specially in the field of neurology: Dr. Eddie P. Barucha of Bombay.

Udyog Rattan Award: by the Institute of Economic Studies: B.M. Aggarwal, an industrialist, for his contribution to the development of the chemical industry and M.A. Hai, Chairman and Managing Director, National Hydro Electric Power Corporation Ltd. for his contribution to industrial development.

Shanti Swarup Bhatnagar Awards: by the council of Scientific and Industrial Research, New Delhi; Rs. 50,000; Dr. Vikrendra Nath Pandey, Bombay, Dr. Srinivas K. Saidapur, Dharwar (Biological Science); Dr. Biman Bagchi Bangalore, Dr. Jhillu Singh Yadav, Hyderabad (Chemical Sciences); Dr. Sri Niwas, Kurukshetra, Dr. Sudipta Sengupta, Jadavpur (Earth, Atmosphere, Ocean and Planetary Sciences); Dr. J.B. Joshi, Bombay (Engineering Sciences); Dr. Vikram B. Mehta; Dr. Annamalai Ramanathan, Bombay (Mathematical Sciences). Dr. Shashi Wadhwa, New Delhi (Medical Sciences); Dr. Deepak Dhar, Dr. Deepak Mathur, Bombay (Psysical Sciences).

C.S.I.R. Golden Jubilee Awards, 1991: Rs. One lakhs: Dr. G.N. Ramachandran and Dr. C.N.R. Rao.

Order of the Legion of Honour: by the French Government: Dr. G.P. Talwar, Director, National Institute of Immunology, New Delhi: Officiier De La of Legiun D'Honneur was instituted by Napoleon Bonaparte in 1802 and is currently headed by the French President.

Dr. B.C. Roy Award: For socio-medical relief efforts: Dr. A.S. Narayana, Hyderabad.

Dr. Vikram Sarabhai Research Award: Rs. 8,000 By Hari Om Ashram. Prof. L.M. Patnaik, Prof. Sulochana Gadgil, Dr. Surendra Pal, Dr. M.G. Chandrasekhar, Dr. Sarneswar Bujar Baruà and Dr. N. Kameshwara Rao.

Lady Tata Memorial Award: By Lady Tata Memorial Trust Rs. 20,58,000. Dr. Ramaswamy, Dr. Jain, Dr. X. Jin, Dr. H.B. Shu, Dr. K. Tchou-Wong and Dr. H.Xu for doing research in the diseases of the blood.

Borlaug Award: Dr. Shenoi and Mr. Deb Roy for their contribution to Agriculture.

Young Scientist Award: Instituted by the Council of Scientific and Industrial Research: Dr. V.P. Rao for his contribution to environment and planetary sciences.

Hari Om Ashram Award 1989: By Indian Council for Agricultural Research. Dr. Lalitha Kumari for her contribution to agriculture sciences.

Rameshwardas Birla Smarak Kosh Award: Rs. 1 lakh. Dr. C. Gopalan (President of Nutrition Foundation of India).

Javed Husain Prize for Young Scientists 1989: Dr. D. D. Sarma of the Indian Institute of Science, Bangalore and Dr. Guamo-Avarez of Spain. This biennial award instituted in 1986 is given to a scientist below the age of 35 irrespective of nationality, race, language, profession, ideology or religion.

The award is named after its donor, the Indian Physicist Dr. Javed Husain who has held professorships in the US and Saudi Arabia and is presently Professor of Physics, Aligarh Muslim University.

Dr. Javed Husain is also the Consultant Editor, (Science) of *Manorama Year Book.*

Visveswaraya Award: By the Institution of Engineers: Mr. K. Rama Rao, Director of Defence Research and Development Laboratory for pioneering the use of composite materials for missile applications.

Delinger Award 1990: By International Union of Radio Science. Prof. Govind Swarup for his contribution to radio astronomy and cosmology.

VASVIK Award: Rs. 25,000. By Vividhalaxi Audyogik Samshodhan Vikas Kendra: Dr. A. F. Mascarenhas of National Chemical Laboratory for his contribution to biological sciences.

National Research Development Corporation Awards: *1. Shram Vir:* Rs. 30,000. Haresh Chandra Joshi, Nirmalendu Das, Bhajan Singh, Bulon Mondal and Ananth Pandey. *(2.)Shram Devi Award for Women:* Rs. 20,000 Ms. Rumana Habib; *(3) Shram Shri:* Keshari Prasad Tiwari, Ananda Dhondu Shinde, Madan Mohan Kohli and Balvinder Sing.

Third World Academy of Sciences Award: Trieste, Italy: $10,000 (approx. Rs. 2,50,000) Prof. Govind Swarup and Prof. Sukh Dev.

Environment

Global 500 Award: For efferts towards protecting and improving the environment: Baba Amte, Biplab Bhushan Basu and M.K. Ranjitsinh.

Vanshree Award-1990 by the Maharashtra Government: Larsen and Toubro in recognition of the commendable afforestation work done at its Awarpur Cement Works in Chandrapur District.

Goldman Environment Prize: Rs. 10,80,000. Harrison Nagau for trying to save a rain forest in Borneo.

Indira Priyadarshini Vrikshamitra Award 1989: Instituted by Environment and Forest Ministry. Padmanabha Reddy and Sona Ullah Banihali for creating an awareness on environment and afforestation.

Peace

Indira Gandhi Prize for Peace, Disarmament and Development: Rs. 15 lakh; 1990: Sam Nujoma, President of Namibia. Previous winners: Mikhail Gorbachev, Mrs Gro Harlem Brundtland, UNICEF and Chatichai

Choonlaven.

Africa Prize: for work towards sustainable end to hunger by the Hunger Project: Mrs. Maryam Babangida, Nigeria's first lady and Prof. Wangari Maathai, founder of the Green Belt of Kenya.

Inter Press Service International Achievement Award: 1991 Mrs. Danielle Mitterrand, founder-President of the Paris-based human rights organisation, France Libertes.

Sakharov Prize: The European Parliament's human rights award: Aung San Suu Kyi, Myanmar's opposition leader.

Jamnalal Bajaj Award: Charler C. Walker, founder, Gundhi Institute, Philadelphia (promoting Gnadhian volues outside India), Dwarko Sundrani, Managing Trustee, Samanvaya Ashram, Bodh Gaya (constructive work), and Krishna Murthy Mirmira, Gramodaya Sangh, Bhadrawati, Chandrapur (application of science and technology for rural development).

Janakidevi Bajaj Award for work relating to Women and children: Mrs. Radsha Bhatt, Laxmi Ashram, Kausani, Almoda.

Bhai Vir Singh International Awrads 1990: Swaran Singh, Dr. Karan Singh, I.K. Gujral, Rev. Chung Hwan Kwak, Prof. Igur D. Serebryakov, Dr. Paulos Mar Gregorios, H.K. Dua Raja Bhalendra Singh, Dr. Bhai Mohan Singh, Mrs. Mohini Giri, G.S. Dhillon, Raghu Rai, M.S. Bedi, Mrs. Sonal Mansingh, Dr. M.S. Gill, M.L. Talwar, S. Bhajan Singh, Capt. Harbhajan Singh, Mrs. Suneet Vir Singh, Dr. J.S. Gundara and A.R. Wig.

Gandhi Seva Award: by Gandhi Darshan Samiti: balubhai Patel for his services to Narmada development.

Martin Luther King Peace Prize: Mikhail Gorbachev.

Indira Gandhi Award for National Integration: Rs. 100,000 Rajiv Gandhi (posthumous).

Jawaharlal Nehru Award for international understanding: Rs. 15 lakh: Robert Mugabe, President of Zimbabwe; Previous winners: U. Thant, Indira Gandhi, Martin Luther King, Khan Abdul Ghaffar Khan, Mother Teresa, Kenneth Kaunda, Marshal Tito, Julius Nyrere, Olof Palma, Nelson Mandela, Javier Perez de Culler and Yasser Arafat.

Jamnalal Bajaj Centenary Award: Rs. 5,00,000: Dr. Nelson Mandela.

Dr. Ambedkar International Award: Rs. 5,000: Gautam Chakraborthy, U.K.

U.S. Peace Run Prize: Ganesh Mansingh, Nepal.

Srimanta Sankaradeva Award: Dr. Mrs. Kapila Vatsyayan.

International Lenin Peace prize: Dr. Nelson Mandela.

Anuvrat Award: Rs. 1,00,000: Prafulla Chandra Sen, former Chief Minister, West Bengal.

International Gandhi Award: Prof. N.F. Lechat, Belgium and Dr. R.V. Wardekar, Bombay.

Arts

Grand Prize: of Fukuoka Asian Cultural Prize 1991. Five million yen: Pandit Ravi Shankar.

Kalidas Samman: by Madhya Pradesh Government. Rs. One lakh. For excellence in the field of Clasical Music. Ustad Ali Akbar Khan, exponent of Hindustani Classical Music. Previous winners: Semmangudi Srinivasa Iyer, Mallikarjun Mansoor, Kumar Gandharv, Ustad Zia Mohiuddin Dagar, Ravi Shankar, Smt. M.S. Subbulakshmi and Ustad Vilayat Khan.

Kalidas Samman: for excellence in the field of classical dance by Madhya Pradesh Government. Rs. One lakh: Dr. Padma Subramaniam.

Tansen Samman 1991: Pundit Bhimsen Joshi; (Hindustani Vocal); Talat Ustad Fyazuddin Dagar and Drupad Ustad Sahiruddin Dagar (both for propogating Drupad music).

Shikhar Samman: Girija Kumar Mathur (Lit); Usthad Abdul Halim Zaffar Khan (Theatre); Ram Manohar Sinha (Performing Arts).

Raja Lakshmi Award: by Sri Raja Lakshmi Foundation, Madras. Rs. 50,000: Dr. 'Nataraja' Ramakrishna, Hyderabad.

Oscar Film Awards: by the (American) National Academy of Motion Picture Arts and Sciences) Dances with Wolves (Best Picture); Kevin Kostner (Best Director for 'Dances with Wolves'); Jeremy Irons (Best Actor for 'Reversal of Fortune'); Kathy Bater (Best Actress for 'Misery'); Whoopi Goldberg (Best Supporting Actress for 'Ghost').

Grammy Awards: Quincy Johns (Albas of the year and five other awards for his 'Back on the Block'); Julie Gold (Song of the Year for 'From a Distance); Luther Vandross mali

Rhythm and Blues Vocal for 'Here and Now'); Anita Baker (female Rythm and Blues for 'Compositions'); M.C. Hammer (Rap artiste); Roy Orbison (Pop male for 'Oh, pretty woman; Posthumous); Marish Carey (Best New Artiste); Marian Anderson, Kitty Wells, Bob Dylan and the late John Lennon (all Lifetime Achievement).

Ritwik Ghatak Award: 'Gan Shatru' by Satyajit Ray.

Media

Pulitzer prize for International Reporting, 1990: Caryle Murphy of *Washington Post* for reporting Iraqi occupation of Kuwait while in hiding and Serge Schmemann of the *New York Times* for his coverage of the reunification of Germany.

Commonwealth Press Union's Astor Award, 1989: Arun Shourie, Former Editor of Indian Express, for his contribution to the cause of press freedom in India.

B.D. Goenka Foundation Award 1989: N. Ram and Ms Chitra Subramaniam of 'The Hindu' and Prof. M. Krishnan Nair of 'Kala Kaumudi'.

Shrikant Verma Award: Rs. 11,000, Pritish Nandy, Editor 'Illustrated Weekly' and 'The Independent'.

PUCL Award for Human Rights Journalism: Rs. 20,000. Mukul Sharma, 'Nav Bharat Times'.

Asian Environmental Journalist Award, 1989: $ 4,000 (Rs. 1,00,000) Mukul Sharma of 'Nav Bharat Times'.

Chameli Devi Jain Award for Women Journalists, 1989: Ms Nalini Singh. TV film maker and Ms Chitra Subramaniyam, 'The Hindu'.

Statesman Award: Mukul Sharma of 'Nav Bharat Times'.

Miscellaneous

Right Livelihood Award, 1991: $ 1,70,000 (approx. Rs. 44.2 lakhs): Save Narmada Movement led by Medha Patekar, India, along with three other international organisations.

Noel Award for Political leadership by UNFEM (UN Development Fund for Women): Corazon Aquino, Philipines, Benazir Bhutto, Pakistan, Gro Harlem Brundtland, Norway and Margaret Thatcher, Britain.

Order of Kilimanjaro by Tanzanian Government: Dr. Nelson Mandela.

UN Population Award, 1990: $ 12,500 (approx. Rs. 312,500) Alfred Sauvy, French demographer and Mauritius National Family and Population Council.

US President's Medal of Freedom: Lech Walesa of Poland.

Simon Boliver Prize of UNESCO: $ 25,000 (Approx. Rs. 625,000) Vaclac Havel, President of Czechoslovakia.

Sarvottam Acharya (Best Allround Teacher) award by the Bharatiya Vidya Bhavan: Rs. 25,000, Anandi Chandra Mukherjee, - blind teacher in New Delhi.

Templeton Prize 1990: $ 604,000 (Approx. Rs. 1,51,00,000) won jointly by Baba Amte who demonstrated the unity of mankind and Prof. Charles Birch, biologist and humanist in Australia.

The Senator Giovanni Agnelli International Prize: $ 2,00,000 (approx. Rs. 50,00,000) Prof. Amartya Kumar Sen, Indian economist and philosopher with the Harvard University, USA.

King Sejong Prize by UNESCO to eradicate illiteracy: $ 10,000 (approx. Rs. 250,000): Kerala Sastra Sahitya Parishad, Thiruvananthapuram.

Union International des Architects Award: Charles Correo, India.

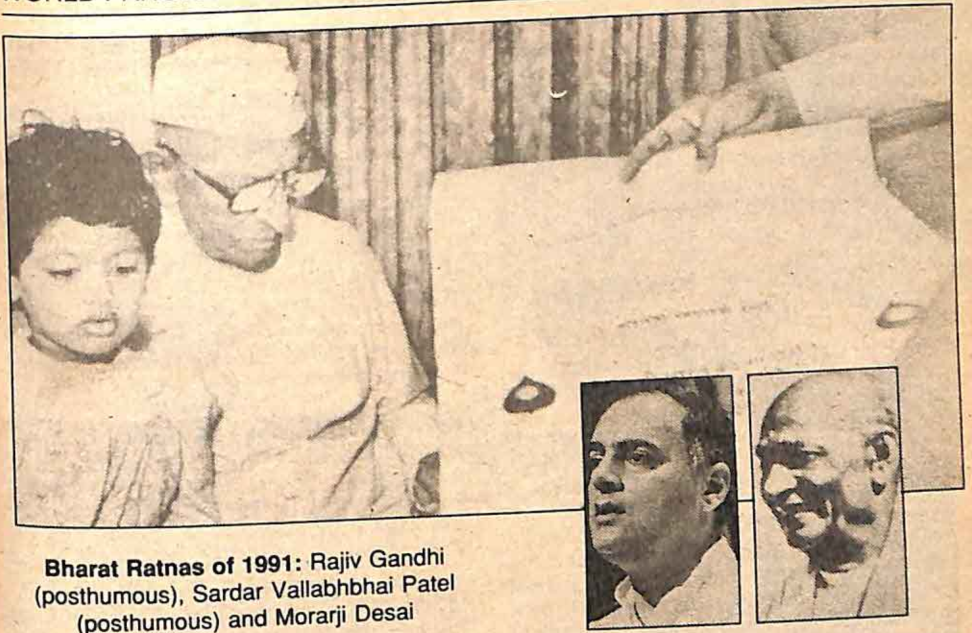
Beloved obit

More than 300 past Pulitzer prize winners gathered to mark the 75th anniversary of journalism's highest honour in New York on September 23, 1991.

The **New York Times** *columnist Rusell Baker, a two-time Pulitzer winner, said, that looking at the audience was a macabre experience.*

"I know how obituaries of one half of you will begin," he told the audience of 1,200 gathered at Columbia university. "They'll start with a descriptive three-word phrase beloved by all obituary writers. That phrase of course is **"Pulitzer Prize winning...."**

Mr. Baker praised the prizes, awarded for distinguished work in American journalism, letters, drama and music, but added that such figures as Mr. F. Scott Fitzgerald and Mr. Duke Ellington never won.



Bharat Ratnas of 1991: Rajiv Gandhi (posthumous), Sardar Vallabhbhai Patel (posthumous) and Morarji Desai

Capital Foundation Society Award: Murasoli Maran and Laurie Baker.

Janaki Devi Bajaj Award for outstanding contribution to the uplift of Women and Children: Mrs. Ratan Shastri, Rajasthan.

Miss World: Gina Marie Tolleson, 21, United States.

Miss Universe: Lupita Jones (Mexico).

Miss International: 1990: Silvia de Esteben, 18, High School student from Spain.

Noma Prize: by UNESCO for outstanding work for promoting literacy: $ 10,000: Government of West Bengal.

Meghdoot Award, by Telecommunication Dept.: Mohanlal, Miss Gaudharvati, Mrs Kiran Garg, Krishna Lal and U.A. Pathan.

National Honours

Bharat Ratna: 1991: Rajiv Gandhi (posthumous), Sardar Vallabhbhai Patel (posthumous) and Morarji Desai.

The following are the former recipients: C. Rajagopalachari (1954). S. Radhakrishnan (1954). C.V. Raman (1954), Jawaharlal Nehru (1955), Bhagwan Das (1955), M. Visweswariya (1955), Govind Ballabh Pant (1958), D.K. Karve (1958), B.C. Roy (1961), P.D. Tandon (1961), Rajendra Prasad (1962), Zakir Hussain (1963). P.V. Kane (1963), Lal Bahadur Shastri (posthumous 1966), Mrs. Indira Gandhi (1971), V.V. Giri (1975), K. Kamaraj (posthumous 1976), Mother Teresa (1980), Vinoba Bhave (1983), 'Frontier Gandhi' Khan Abdul Ghafar Khan (1987), M. G. Ramachandran (posthumous 1988). Dr. B.R. Ambedkar (1990), Dr. Nelson Mandela (1990).

Dada Saheb Phalke Award 1990: For outstanding contribution to the cause of cinema: Akkineni Nageswara Rao. Previous recipients: Devika Rani Roerich, B.N. Sircar, Prithviraj Kapoor (posthumous), Pankaj Mullik, Ruby Myers (Sulochana), B. N. Reddy, Dhiren Ganguli, Kanan Devi, Nitin Bose, R.C. Boral, Sohrab Modi, Naushad Ali, P. Jairaj, L.V. Prasad, Durga Khote, Satyajit Ray, V. Shantaram, B. Nagi Reddy, Raj Kapoor, Ashok Kumar and Lata Mangeshkar.

National Film Awards for 1990: *Swarna Kamal* for the film Marupakkam, Tamil, directed by K.S. Sethumadhavan and produced by National Film Development Corporation and Doordarshan.

Rajat Kamal for the Second Best Feature Film: 'Ek Doctor Ki Maut' directed by Tapan Sinha and produced by National Film Development Corporation.

Indira Gandhi Award for the Best First Film of a Director: Ajayan's 'Perumthachan' (Malayalam).

Best Film providing, popular and wholesome entertainment: 'Ghayal', Hindi by Rajkumar Santoshi.

Best Non-feature film: Graven Image by Shyamasree Tagore.

Best Short Film: 'Aamukh' by Raj Kumar.

Best Film Critic: Shoma A. Chatterjee.

Best Book on Cinema: 'Hindi Cinema Ka Ithihas' by Manmohan Chaddha.

Other awardees include: Tapan Sinha (best director), Amitabh Bachan (best actor), Vijaya Shanthi (best actress), Nedumudi Venu (best supporting actor), K.P.A.C. Lalitha (best supporting actress), Shruti, Rarun and Shamily (best child artistes), M.G. Shreekumar (best male playback singer), Lata Mangeshkar (best female playback singer), Santosh Sivan (best cinematography), K.S. Sethumadhavan (best screenplay), M.S. Mani (best editing), Hridayanath Mangeshkar (best music direction), Pankaj Kapoor, Sunny Deol and Jaya bharathy (special jury award).

The best feature film in regional languages: Hemen Das's "Joo" (Assamese), Nabyendu Chatterjee's "Atmaja" (Bengali), Govind Nihalani's "Drishti" (Hindi), S.V. Rajendra Singh's "Muthina Haara" (Kannada), G. Aravindan's "Vasthuhara" (Malayalam), Mani Ratnam's "Anjali" (Tamil), B. Narsing Rao's "Matti Manushulu" (Telugu), and A.S. Sjarma's "Ishanou" (Manipuri).

Sangeet Natak Akadami Honours, 1991: *Fellowships:* Alain Danielou, Kelucharan Mohapatra and T.S. Parthasarathy.

Music: N. Zahiruddin Dagar (Hindustani Vocal); Prabha Atre (Hindustani Vocal); Annapurna Devi (Hindustani Instrumental-Surbahar); Chhatrapati Singh (Hindustani Instrumental-Pakhawaj); Sheik Dagwood (Hindustani Instrumental-Tabla); S. Rajan (Carnatic Vocal); Vellore G. Ramabhadran (Carnatic Instrumental-Mridangam); Kandadevi Alagiriswamy (Carnatic Instrumental-Violin); Sudhir Phadke (Creative); Bindhyavasini Devi (Folk music-Bihar); Puran Chand and Pyare Lal Wadli (Joint Award) (Folk music-Punjab) and Sakar Khan Manganiar (Folk music-Rajasthan).

Dance: Adyar K. Lakshmana (Bharatanatyam); Reba Vidyarthi (Kathak); Chennithala Chellappan Pillai (Kathakali); Raja and Radha Reddy (Joint Award) (Kuchipudi); Chandra Shekhar Bhanj (Chhau-Mayurbhanj); Chandralekha (Creative).

Theatre: Neelu Phule (Acting-Marathi); Sabitri Heisnam (Acting-Marathi); Fritz Bennewiz (Direction); Mohit Chattopadhyay (Playwriting-Bengali); S.S.S. Thakur (Karyala-Himachal Pradesh) and Keremane Mahabala Hedge (Yakshagana-Karnataka).

Lalit Kala Akademi Awards, 1990-91: Rs.10,000 each. *Painting:* B.N. Arya, P. Perumal, Jodh Singh, Vishnu Das, Ashwini Kumar Sharma, Sanjiv Sinha, Suresh Jain, Kalicharan; *Sculpture:* Chandrasen Jadava, Vijaya Velu.

Awards for 1990: Tapan Bhowmik, Amitava Bhowmik, Valsan Kolleri, Pradeep Kumar Saxena, Anil Kumar, Mrs. Gogi Saroj Pal, Jadish Mahendra Kadia, K. Rajaiah, Deven D.B. Seth.

National Award on consumer protection: By the Dept. of Civil Aviation, Govt. of India: Rs.50,000: Consumer Action Forum, Calcutta.

Bharat Award for bravery, 1990: Rs.5,000. Instituted by Indian Council for Child Welfare: Kumari Dhudiben Khodabhai, 14, of Surendranagar district of Gujarat. She is the first girl to be selected for this award; *Sanjay Chopra Gallantry Award: 1990:* Rs. 1,000 Master Shiva Rama Krishnan alias Sanju, 14, of Himachal Pradesh; *Geetha Chopra Award 1990:* Rs.1,000; Kumari Madhu Maya Chetri, 14, of Sikkim; *National Award, 1990:* Rs.500, Master Tejas Shah, 4, of Madhya Pradesh.

Ashok Chakra: The highest civilion award for gallantry: Randhir Prasad Varma I.P.S. who laid down his life fighting the Panjab militants in Dhanbad in January 1991.

Shaurya Chakra: Mrs. Neela Sawant and Mrs. Sadhana Milind Pawar, both Indian Airlines hostesses for their heroic effort in evacuating passengers when their A 320 flight crashed at bangalore in Februry 14, 1991. ■

PART THREE

INDIA AND THE STATES

INDIA UPDATE

SHELTER FOR MILLIONS

Shelter is a basic human need. Most human settlements in developing countries reflect poverty and squalor. Population and the aspirations of families are ever increasing. To ensure the dignity of the individual and preserve the living quality of the family, basic amenities and residential privacy are essential. In terms of quantity and quality, the gap between supply and demand in the housing sector in India has ever been widening. If there are 100 million houseless families in the world, India has about 23 million without any shelter. This will grow to an alarming 41 million by the turn of the new millennium.

focus on HOUSING

In India, eighty crores plus population live in over 140 million houses, dotted over 25 metro cities, 2500 small and medium towns and over 5 lakh villages. The housing scene is rather alarming with a backlog of 7 million houses in urban and 16.3 million houses in the rural areas. By the year 2001 the figure is expected to shoot to 15.5 million houses in the urban and 25.5 million houses in the rural areas.

This is mainly due to the rapid industrialisation and migration to urban areas, population growth, break-up of joint family and above all a general lack of housing standards throughout the country. As it is, the gap between supply and demand is at a never meeting proportion. Hence, the need for increased supply of housing . This is only possible by improving the existing reparable housing stock, by adopting appropriate/alternate and cost-effective technologies in construction, providing access to land. Optimum utilization of limited resources of land, finance and building materials is the key.

Considering the resources needed for housing namely land, housing finance, building materials and technologies, human resources for professionals and artisans level, delivery system through public,private, cooperative and individual sectors, many initiatives have been taken by the Government of India recently. The National Housing Policy is on the anvil and is receiving the appropriate inputs for shaping into a live document leading towards Action Plans for advance for making the housing needs of all a reality by the turn of the century. The UNCHS call for "Shelter for all by 2001" also highlights this crying need.

Further, at the institutional level the National Housing Bank and various institutional financing outlets have been created with a view to augmenting the appropriate financial resource needs for covering the larger housing needs through various sources.

Role of Construction activity: Construction activity accounts for over 50% of our national developmental outlays. Over the successive 7th Five Year Plan period, this sector has taken care of huge multipurpose river valley projects, irrigation and canal networking system, roads and fly-overs, railway projects, power stations, steel plants, industrial establishments, schools, colleges, health centres and hospitals, office buildings, commercial and shopping complexes and residential neighbourhoods including housing, water supply, sewerage and drainage projects.

Take any spectrum of activity-the role of construction becomes evident. It is further observed that out of the total investment in Plan and non-Plan in construction activity, over 50% is spent on building construction and out of this, 50% accounts for residential buildings for housing. Therefore, 25% of the national outlays are for building construction, and 12.5% for housing. Financial resources is one of the critical factors. Equally important is the appropriate human resources needed to take care of this gigantic sector.

The fraternity of Civil Engineers, Architects, Physical Planners, Surveyors, Geotechnicians, Construction management specialists, etc. represent the professionals and are considered specialized human resources. Diploma holders in Civil Engineering and Architecture give the back-up services for supervisory support. An equally critical group of human resources is the artisans and construction workers.

Our Schools and Colleges for Engineering and Architecture and technical institutions have played a leading role in imparting educational training to this group at the right time and in the right number to cater to the developmental needs of the country. It is with a sense of pride that we can share the positive contribution of Civil Engineering fraternity towards construction activity.

From the basic stream of Civil Engineering, high specializations have emerged to take care of diverse sub-sector needs like highways, transportation, hydraulics, soil mechanics, foundation engnieering, structural engineering, public health engineering, surveying, building materials, science and technology, agriculture, environmental engineering, etc. Similarly, there is an equally positive role for alternate streams of architecture, town planning, building systems engineers with whom the Civil Engineers have to co-ordinate, co-operate and interact to synthesise all the resources towards the creation of the final product, be it road or railway or dam or building. All these call for the right type of human resources developed at the degree, post-graduate specialization levels or professional diploma and certificate courses for supervisory personnel and skill upgradation training for artisans and construction workers.

Role of Technology: Construction costs are increasing at over 13% each year, whereas the annual escalation is around 8%. The weaker sections, low income group and middle income group are increasingly finding it difficult to construct houses using conventional building materials and practices that cost around Rs. 200-Rs. 250 per sq.ft. At the same time, there are many cost-effective technology options using R & D inputs for bringing down costs on various elements of construction; the cumulative effect of it could bring down construction cost to Rs. 80-Rs. 150 per sq.ft. In the rural and small town context, bio-mass based technologies could help construct a house at Rs. 50-60 per sq.ft.

One of the critical areas which require the urgent attention of all is building materials and technologies. Further, these are not able to meet even the present housing requirements. A slight increase in housing operational level brings in shortages of materials and thereby an increase in costs of building materials. Considering the requirement of major conventional/building materials in the 8th five year plan period, it is noted that there is a shortage of over 17 million tons of cement, nearly 3 million tons of steel, over 50,000 million bricks and 14 million cubic meter of timber etc.

Even if one has to take recourse to the availability of conventional building materials, the fact of the matter is that either these are costly or in short supply. Therefore, there is a need to look beyond and find out how innovative and new building materials and technologies can be identified and harnessed in the housing building system.

With the growing thrust on agriculture and industrialisation there are substantial amounts of agro-industrial wastes that are available which can be made use of appropriately. These are not to be considered as "wastes" but can be looked upon as "wealth". These are not to be branded as "refuses" but converted as "resources".

Over 150 million tons of agricultural and industrial wastes per annum are available in the country. The various thermal power plants generate besides power fly ash which is of the order of 30 million tons. The fertiliser factories bring out by-product of phospho gypsum of the order of 5 million tons annually. Red mud, considered as waste from aluminium plants again account for nearly 2 million tons per annum. Blast furnace slag waste from iron and steel industry is of the order of 9 million tons annually. Further, agricultural wastes like rice husk, straw, sawmill waste, coconut husk, coir waste, pith, jute stalk, sisal, groundnut husk, etc. and other biomas material, amount to nearly 60 million tons annually.

Therefore, the strategy that is being envisaged in the National Housing Policy in respect of building material and technology has been to go in for a package of measures. These cover:

1. Arrangements for selection and promotion of proven technological advances.

2. Promotion of manufacture of building materials and components through financial assistance, technical help, fiscal concessions.

3. Support to extensive network of Building Centres to be run by autonomous/non-Govt. societies with HUDCO and State Government support for extension of technology, upgrading skills and more employment.

4. Setting up of a dedicated organization for technology, research, application and promotion concering the following areas.

- Building materials.
- Selective approach to technology.
- Marketing/outlet through building centres and
- Franchising of the building centres and
- Development of appropriate standards.

Largest Employment: Though pre-fabrication system can improve the pace of supply of housing, it may be difficult to have the high initial capital investment. It is also wrong to displace the large labour force from their employment. Construction is the second largest employment source in our country after agriculture. This directs us to concentrate on improving the locally available materials and technologies to meet the needs of varying climatic, socio-economic and cultural regions of our country.

Secondly, it depends on providing easy access to land with necessary infrastructure, wherein, people can build to their needs. Cooperative group housing will have a major role in the years to come. Establishing large building material estates and market with product outlets and making available the skilled personnel necessary to carry out the work, is of substantial importance in this direction. The inputs of public, private, corporate, co-operative and individual sectors need to be harnessed to the full.

However, there is a yawning gap between the availability of technologies at lab level and their use in field situations. The 'awareness', 'appreciation' and 'application' facets have not been receiving the attention it deserves. It needs a massive technology transformation effort from 'lab' to 'land'–from the technologists to technocrats down to the technicians.

Our curriculum for civil engineering and architecture needs revamping, reflecting the advances in cost-effective technology options. Our curriculum needs to be upgraded to cover additional hands on field level exposure with practical training for 6 months to a year, in addition to the current 4-year theoretical exposure. Doctors have it through house surgeoncy and Chartered Accountants have it through articleship. Our young Civil Engineers and Architects would be better human resources if the above aspects are kept in view. We also need the right level of inter-sharing between needs of building construction industry and how educational institutions could cater to this. There is need for interaction between faculty and industry.

Another interesting development is the felt need for development of professionals to cover habitat development as a multi-disciplinary course representing civil engineering, architecture, social sciences and economics.

Equally important is the artisan's skill level. This is an area where construction industry has been caught on the wrong foot. There are any number of engineering colleges and architectural schools and polytechnics producing professional and supervisory level of human resources. However, for the needs of artisans and construction workers who build the structures brick by brick, tile by tile, there are no means of education or training.

He or she, comes into construction field as unskilled worker, develops into semi-skilled worker and after 5 to 6 years becomes a skilled worker. In a unique situation of large gap in supply and demand, an unskilled worker takes on the role of a skilled worker. One of the most critical gaps is, therefore, non-availability of skilled work force exposed not only to conventional construction system but also to new technologies.

To meet the requirement of skilled artisans in the building trades, the Housing & Urban Development Corporation (HUDCO) on behalf of Government of India/Ministry of Urban Development, has started a National Urban Development, has started a National Programme of setting up of National Network of Building Centres, as an institutional set-up to train the artisans to supply cost effective materials and to provide consultancy services to the public. Till now, over 140 Building Centres throughout the country have been established out of which over 40 are functional.

Technology to the People: Taking technology to people is yet another important dimension. HUDCO has been taking a lead role in propagating appropriate/alternate and cost effective technologies. HUDCO, for the first time, has started a permanent Building Technology Exposition and Housing Guidance Centre at Madras. The Centre provides an excellent opportunity for projecting the significant work done by various R & D bodies, entrepreneurs and individuals in this line and guidance for the professionals, individuals and group home builders on various resources like land, finance and technologies.

They get an opportunity to have a kaleidoscopic view of all technology options and building materials and innovations and also give guidance and information on other resource areas needed for house building. We need such exposures all over the country, to start with in all state capitals and to be followed with the district headquarters, cities and towns.

Another major development is the formation of Building Material and Technology Promotion Council by the Government of India to serve as an apex body for technology scan, application and promotion of building materials and technologies including the type of marketing support needed for the same. This apex organisation set up by the Ministry of Urban Development would be playing the vital role of giving appropriate focus needed for the key area.

Promotion of building material units using industrial wastes or by-products or agro wastes which result in conservation of mineral wealth, waste utilisation, environmental well-being and ecological balance or protection of flora and fauna, is, therefore, one of the thrust areas. Yet another thrust area is building material production with low energy input as well as substitute for energy intensive building material products.

In as much as the various technology options for utilisation of flyash have been proven by various agencies, it is now time to get into the key area of implementation. For any technology thrust, technologists, technocrats and technicians and more important the user agencies as well as the entrepreneurs are to be linked together.

Yet another way to demonstrate the use of these cost effective technologies in building is through projects of high visibility nature which could be public asset buildings like Village Office, Primary Health Centre, Operation Blackboard Schools, Angan Wadi, Bal Wadi, Community Hall, Bharat Ghar, and Kalyana Mandapams. Even in this area there has been a very major start in various states. That way the technologies get credibility and exposure among the general public.

What is good for the people should be good for the Government or vice-versa. Therefore, the Government and Public Agencies could come forward in demonstrating the use of these technologies in their own building programme. Automatically, this gets absorbed or adopted by the people in their own housing and building programmes. The success of stabilized mud blocks, Laurie Baker home technologies, application in ferro cement and other cost effective technologies developed by various R & D bodies have all come out as a result of such effort.

Building Materials: Another area where the thrust needs to be given is the development of building material estates on the lines of small scale industrial estates or electronic estates so that the production of building material by small scale entrepreneurs get necessary fillip. Closely linked with this is the appropriate market access. Quite often we see individual builders going to as many as 15 to 20 outlets to get bricks, steel, cement, aggregates, timber, hardware, electrical items, sanitaryware items, pipes, tiles, paints etc. It is time every metro city and major towns came up with Building Material Markets which would give access to the various building materials under one roof. There are similar arrangements in other countries. In the small town and rural context the Building Centres or Nirmithi Kendras and their sub centres or Upa Kendras can help in being the outlets for appropriate materials, components and products.

In addition we also need to propagate these amongst the general public through the use of mass media. We need to be geared to meet the growing needs of construction, building and housing programmes which are already witnessing a quantum jump.

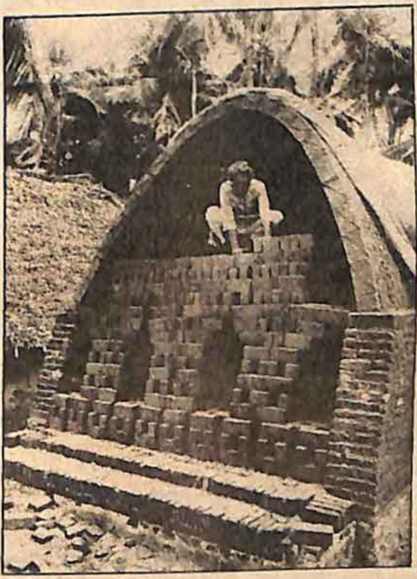
Are we equipped to handle this in the nineties and in the new century? A major change is needed in education, construction systems, practices and attitudes. This is a challenge.

By **V. Suresh,**
Director,
Corporate Planning, HUDCO,
New Delhi.

Meekar's Baked Houses

Ray Meekar is an American potter-ceramist settled in the Aurobindo Ashram, Pondicherry. Two decades ago he set up The Golden Bridge Pottery there along with his ceramist partner Deborah Smith.

As the pottery grew and, over the years, gained a reputation of its own for its special style of tableware products and student training programmes, Ray Meekar's interests gravitated towards the specific problems of mud housing in the countryside.



For long it has been acknowledged that one of the main drawbacks of mud housing is its unstable nature, which makes it vulnerable to the vagaries of the nature, particularly rains and floods. This brings its own share of annual misery to the rural poor. Yet mud, as a material, remains the most viable ingredient for residential units within the rural economy.

Meekar describes the process for building and stabilising a mud brick structure by fire as follows:

–Build a room/kiln in unbaked mud brick. The roof can be either a vault or a dome.

–Fill the volume with products like bricks, tiles, jalis, chullahs, drain pipes, etc.

–Fire the whole mass as a kiln to between 900 and 1000 degrees C.

–Remove the products and use a portion for finishing the house.

–Sell the remainder of the products to recover building costs.

If product sales cover their own production cost, including fuel, then–the cost of the fire-stabilised structure can be construed to be identical to the cost of the mud brick structure. Which is as good as saying that you are getting the house 'dirt cheap'.

Ray Meekar's inspiration came from getting to see the works of Iranian architect Nadir Khalili who was among the first in contemporary times to formulate a method for stabilising mud structures. Khalili's book 'Racing Alone' (Harper and Row, 1983) narrates his five-year quest for a technique to improve the village mud house.

While Meekar strictly avoids any romanticisation of mud buildings and makes no tall claims for its cost efficiency, the results of the five fire-stabilised structures he and his associates have successfully built in and around Pondicherry are self-evident. He has conclusively proved that it is possible to build practical and aesthetic dwellings with mud at costs no urban architect can dream of.

Since the roofs for the structures had to necessarily be vaulted or domed in the leaning or 'Nubian' technique for purposes of strength as well as ensuring proper draft during firing, it meant the interior volume of the structure could be stacked with products needed to complete the house and the whole thing fired at one shot.

For the wretched

Dharavi, in Bombay, is Asia's largest slum. Lying on the main thoroughfare from Sahar, India's most modern international airport, to the city down town, it has been an eye-sore to the visitors and planners alike.

It is not an easy task to give proper housing for the teeming millions of slum dwellers in India's largest metropolis. The slums grow at a faster pace than the city's modern skyscrapers of glass and concrete.

There are 55 lakh people living in 1000 slum pockets in about 11 lakh tenements spread about 26 square kilometers of land belonging to the government, the municipal corporation and the private landowners. Succssive governments and municipal committees have never been successful in formulating a viable scheme to tackle the problem.

Dharavi is a living example of how a well-intentioned project could be scuttled by the vicious manipulations of the so-called 'slum lords'.

It was Prime MInister, Mr Rajiv Gandhi who announced during the Congress centenary celebrations in December 1985 that he would release Rs. 100 crores from Central government funds for improving the quality of life in the city. It took a year-and-a-half for local politicians to figure out how the money could best be spread over the various needs of the city's lower and lower middleclass voters.

Originally named Prime Minister's Grant Project (PMGP), it has been renamed the Rajiv Gandhi Grant Project (RGGP).

Finally, it was decided that Rs. 41 crores would go towards replacing old buildings in South Bombay, under the urban renewal scheme; Rs. 20 crores would be given to the Bombay Municipal Corporation (BMC) and the Bombay Metropolitan Region Development Authority (BMRDA) to improve Dharavi's infrastructural facilities, and the remaining Rs. 49 crores would encompass several slum-based home and commercial unit improvement schemes.

For, these buildings in Balaji Nagar, Netaji Nagar and Gandhi Nagar, bear testimony to the efforts made since 1987 to carry out the slum improvement component of the PMGP, and will be used to justify an extension of the project (which runs out early 1992) with a fresh infusion of funds.

Beyond the impressive facade of these structures, though, life in Dharavi's congested, garbage-choked labyrinth of alleys goes on as before. Similarly, problems and controversies dog the entire project, behind all the politically-motivated hype.

Apart from subsidising slum replacement projects in Dharavi, this money would offer "upgradation" facilities to slum dwellers in the city's north-east suburbs as well as in Dharavi, and allow for slums blocking several proposed public projects like the Mankhurd-Belapur rail link to be relocated, explains the PMGP director, Mr. P.S. Bhogal.

It was obvious that Rs. 100 crores spread over a variety of projects, would be mere drops in the ocean.

and the damned......

Dharavi slums and flats built under Rajiv Grant Project (inset)

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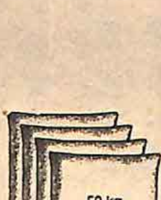

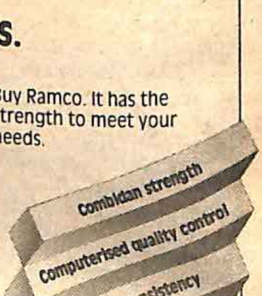

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Housing is not a place of dwelling alone. It also satisfies an individual's social and psychological needs. House by itself is not a productive asset but investment in housing helps in increasing productivity. Provision of shelter is thus closely linked with a country's overall socio-economic development.

It was in recognition of the mutually supportive roles of shelter and development that in mid-eighties following declaration of 1987 as the "International Year of Shelter for the Homeless" that concerted efforts were made in our country to formulate a comprehensive National Housing Policy, encompassing all the elements relevant to shelter development. The most significant measure taken was to establish the National Housing Bank (NHB) on July 9, 1988 under the National Housing Bank Act of 1987 to function as the apex agency to promote housing finance institutions, to mobilise resources for the housing sector, to provide financial, technical, administrative assistance to housing finance institutions as also to regulate their working, and to co-ordinate with all the agencies connected with housing.

The genesis of formation of NHB, however, dates back to 1971 when the Banking Commission made a recommendation to this effect, which was echoed by the expert committees constituted subsequently, the latest being the High Level Group appointed by the Government of India in 1986 under the chairmanship of Dr.C. Rangarajan, Deputy Governor, Reserve Bank of India.

Housing Scenario: Despite the importance of the shelter sector, it has not been receiving the priority it deserves in terms of Plan allocations. On the contrary, investment in housing as a proportion of total investment under the Five Year Plans has been gradually declining. In the first Five Year Plan (1951-56), investment in housing at Rs. 1,150 crores formed 34% of the total outlay. No doubt, over the successive Plans investment in housing in absolute terms has been increasing but as a proportion of the total Plan outlays, it has been shrinking. In the Seventh Five Year Plan (1985-90), investment in housing was of the order of Rs. 31,458 crores, i.e. 30 times the investment under the First Five Year Plan but it constituted only 9% of the total outlay.

Similarly, the share of gross fixed capital formation in housing at constant prices declined from 3.2% of the Gross Domestic Product in 1980-81 to 2.6% in 1988-89. Investment in housing has also not kept pace with the growth in the National Income. Ac-

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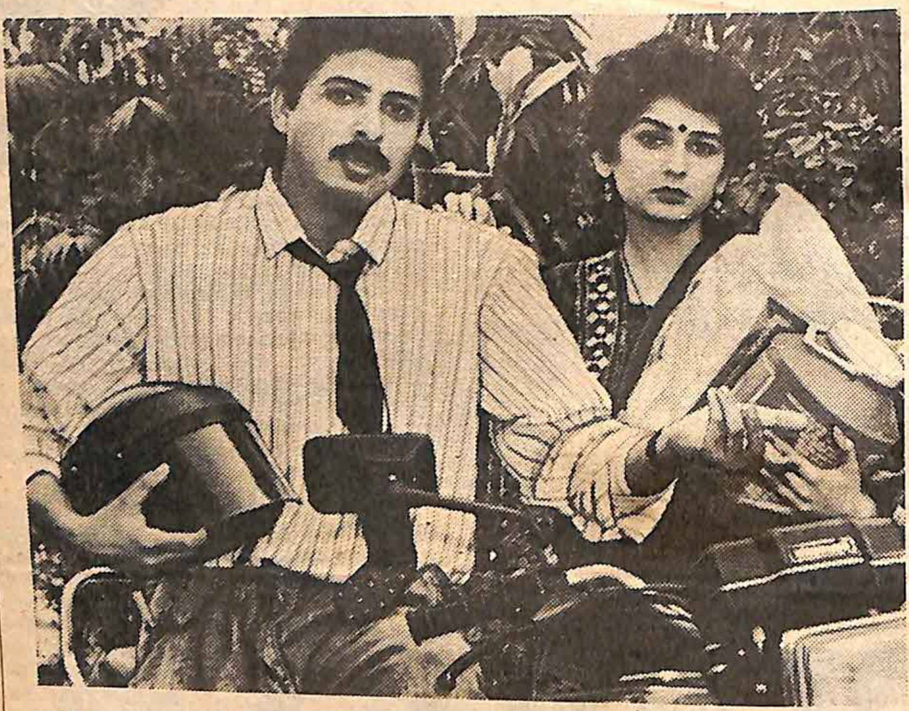

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cording to the new series of National Accounts Statistics (Base 1980-81), the share of income from housing at current prices declined from 5.9% of the National Income in 1980-81 to 4.6% in 1987-88. The decline at constant prices during the same period was from 5.9% to 5.3%.

Low priority accorded to investment in housing is not a feature peculiar only to our country. This has been the pattern in most of the developing countries and for justifiable reasons. Housing requires huge capital resources. Developing countries suffer from the syndrome of low investment, low capital formation, low productivity, low savings, leading to scarcity of resources. It is a vicious spiral from which they find it extremely difficult to extricate themselves. Understandably, when the national goal of a developing country would be to attain higher rate of economic growth within the shortest possible time, agriculture and industry get priority in the matter of allocation of resources, with housing relegated to a back seat.

In spite of the relatively low priority received by housing, the housing stock in the country has been increasing mainly due to private initiatives taken by the households themselves. As per the estimate of the National Buildings Organisation (NBO) based on census figures, the useable housing stock (i.e. excluding houses below minimal standard of habitation) rose from 68.8 million units to 102.7 million units between the two decades from 1961 to 1981. Despite so, there is a huge backlog of housing shortage in the country.

As on 31-3-1981, the housing shortage was estimated by NBO at 23.3 million housing units, of which 16.3 million were in rural areas and 7 million in urban areas. Estimates based on 1991 census data are not yet available but the current housing shortage is stated to be roughly around 31 million housing units, which is expected to rise to 41 million housing units by the turn of the century, i.e. year 2000 A.D. – 25.5 million units in rural areas and 15.5 million units in urban areas.

While finance is no doubt a crucial input for the growth of the housing sector, it needs to be recognised that lack of adequate financial resources is not the only inhibiting factor. There are equally, if not more, important constraints to the growth of the housing sector, such as non-availability of serviced land for housing construction, high cost of construction and formidable legal impediments calling for substantial changes in the shelter policy as well as in the legislation affecting housing.

The draft National Housing Policy formulated by the Central Government in May 1988 had spelt out the strategies to be adopted to tackle the housing problem, with the basic objectives of helping people to secure for themselves affordable shelter with certain minimum norms, through access to land, materials, technology and finance, achieving a sustained growth of the nation's housing stock, and its proper conservation, renovation and upgradation, improving the environment of human settlements with a view to raising the quality of life, achieving the broad goal of eradicating houselessness by the turn of the century and to achieve these objectives, reorienting the working of the public agencies to function as 'facilitators'.

These strategies are in consonance with the "Global Strategy for Shelter to the year 2000" released in December 1988 by the United Nations Centre for Human Settlements and the policy framework recommended by the National Commission on Urbanisation (August 1988). The draft policy is stated to be under further refinement process.

Finance System: Even though the last few years have witnessed radical measures aimed at broadening and deepening the financial system in our country, the fact remains that a significant proportion of financial transactions even now takes place outside the formal financial system. This is much more so in housing finance.

The first task to which NHB addressed itself after coming into existence was to have a close look at the existing financial framework for meeting housing needs. It found that the existing housing finance system had broadly two segments, viz. 'formal' and 'informal' though precise demarcation was difficult since a house-seeker most often utilised for

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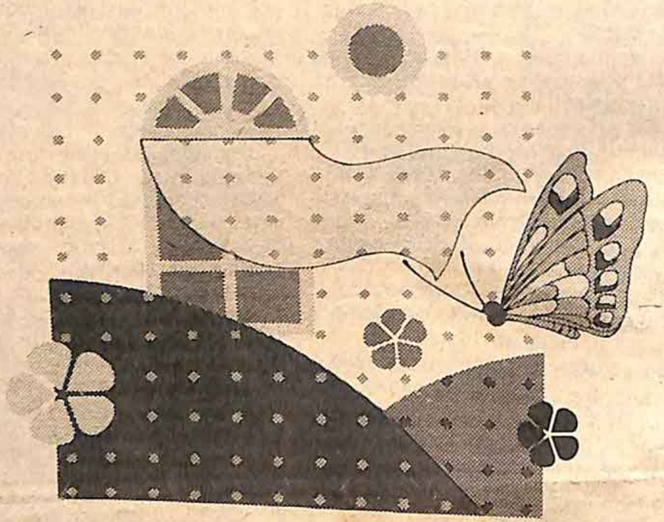

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housing construction not only his own savings and sale proceeds of his other assets or borrowings from relatives, friends, etc. but also took loans from credit institutions. Further, the formal segment comprising the Central/State Governments, financial institutions like the Life Insurance Corporation of India, General Insurance Corporation of India, Unit Trust of India, Provident Funds, commercial banks and housing finance institutions including housing co-operatives accounted for less than 20% of the investment in housing. In other words, more than 80% of such investment had come from the informal segment which includes households themselves and public/private sector employers providing housing loans to their staff.

This again is a feature common to most of the developing countries where the 'formal' housing finance system has yet to take roots. The reasons are obvious. They do not as yet have a significant number of specialised housing finance institutions. People prefer the informal system because it functions on family, group or community basis and hence is speedier in providing loans with barely any formalities. This is not, however, to suggest that no attempts should be made to formalise the system.

It is only through successful financial intermediation between borrowers and investors with differing requirements that it would be possible to garner the large magnitude of resources needed for tackling the housing problem and eventually pave the way for integration of the housing finance system with the overall financial system.

Finance Companies: Housing finance institutions have two streams – housing finance companies and co-operative housing finance societies. The co-operative housing finance system which is more than 80 years old is the best example of 'self-help' in housing. It has a two-tier structure – apex federations at State level and co-operative housing societies at primary level (numbering about 45,000) – which functions under the Registrar of Co-operative Societies in various States like other co-operative banks and institutions. Housing Finance Companies (HFCs) are comparatively of recent origin.

There are a large number of HFCs but the most prominent among them with sizeable equity base and operations are only two, viz. the *Housing and Urban Development Corporation Ltd. (HUDCO)* and the *Housing Development Finance Corporation Ltd. (HDFC)*. During the last 4 years, particularly after the establishment of NHB, several HFCs set up/sponsored by public sector banks, LIC and GIC have come up.

HUDCO is a wholly Central Government owned company set up in 1970. It extends project finance to State housing boards, development authorities, etc. for housing with thrust towards the Economically Weaker Sections and the Low Income Group. Fifty-five per cent of HUDCO's funds go to these two categories and of the dwelling units constructed, 90% are for their benefit. HUDCO raises its resources mainly through issue of bonds.

A Model: HDFC, formed in 1977, is a private sector organisation engaged in retail lending for housing to individuals, as distinguished from HUDCO's project lending. HDFC has done pioneering work in developing such type of lending and has established good track record, which prompted the High Level Group to recommend setting up of similar institutions. HDFC has thus served as a 'model' for other HFCs and it has also assisted in the task of establishing the *Gujarat Rural Housing Corporation* (set up by HDFC itself), *CanFin Homes Ltd.* (sponsored by Canara Bank) and *SBI Home Finance Ltd.* (sponsored by State Bank of India) by participating in their equity.

NHB's main functions are (i) extending financial assistance for housing to housing finance institutions and scheduled banks, undertaking research and surveys on construction techniques and other studies relating to or connected with shelter, housing and human settlement,(ii) formulating schemes for mobilisation of resources and extension of credit for housing, (iii) formulating schmes for the economically weaker sections of the society , which may be subsidised by the Central/State Governments or any other source, (iv) providing guidelines to the housing finance institutions to ensure their growth

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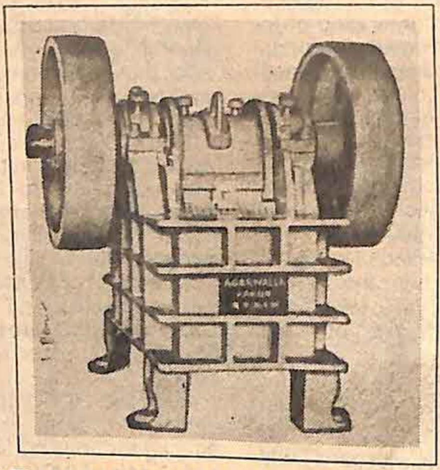

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Guidelines for HFCs: As it is, any HFC, i.e. a company which primarily transacts or has as its principal object (as per its Memorandum of Association) the transacting of the business of providing finance for housing, whether directly or indirectly, comes within the purview of NHB's "Housing Finance Companies (NHB) Directions, 1989" issued on June 26, 1989 relating to acceptance of deposits.

Under the said Directions, an HFC can accept deposits with maturity of over 24 months and not exceeding 84 months, can raise deposits and other external borrowings upto ceilings of 10 to 15 times their Net Owned Funds (NOF) i.e. paid-up capital plus free reserves minus intangible assets, depending on the size of NOF, have to maintain liquid assets at 10% of their deposit liability, etc.

NHB's chief mandate is to promote a sound and healthy housing finance system. Towards this end, NHB has formulated its Guidelines, compliance with which is a pre-condition for an HFC to avail of financial assistance from NHB. The Guidelines require that, in addition to complying with the Directions, an HFC desirous of obtaining financial support from NHB should have a minimum paid-up share capital of Rs. 1 crore, with equity participation by institutions (scheduled banks/public financial institutions/Government/HFCs approved by NHB), institutional representation on its Board of Directors, etc.

NHB has powers to inspect an HFC for the purpose of verifying compliance with the Directions as well as under the Refinance Schemes. As of now, NHB has recognised, besides HUDCO, 15 HFCs including 7 in the private sector for extending its financial support. NHB has also participated in the equity of two bank–sponsored HFCs and has committed equity participation in two more such HFCs, on the condition that their thrust area of operation in the initial stages will be in those States where the existing institutional framework for meeting housing finance needs is inadequate.

Refinance Schemes: In NHB's perception, the housing finance system comprises not only housing finance institutions i.e. HFCs and co-operative housing societies but also the banking system. Therefore, before formulating any refinance schemes, it was necessary to bring about changes in the policy relating to extension of credit for housing by the commercial and co-operative banks as laid down by RBI.

Accordingly, RBI issued a comprehensive circular to scheduled commercial banks in November 1988, revising its earlier guidelines on housing finance, with relaxations in certain terms and conditions as regards rates of interest, security, margin and repayment period. At NHB's instance, similar relaxations were made in the housing finance guidelines applicable to State co-operative banks and urban co-operative banks.

NHB's motto is *Small Man First*. This has been the underlying basis of all the Refinance Schemes formulated by NHB. The first Refinance Scheme introduced by NHB was in January 1989 for scheduled commercial banks. Later, in May/June 1989, Refinance Schemes were also introduced for scheduled State co-operative banks, scheduled urban co-operative banks, HFCs and apex co-operative housing finance societies.

NHB also introduced its scheme for subscription to the Special Rural Housing Debentures (SRHDs) floated by the State level ARDBs in respect of eligible housing loans granted by their branches/primary land development banks to non-defaulting farmer members in rural areas. The basic feature of all the Schemes is that refinance from NHB is available upto 100 per cent of eligible direct housing loans given by the primary lending agencies.

The terms and conditions of housing loans given by banks have to be as per RBI guidelines. The period of refinance is the same as stipulated for housing loans, i.e. 15 years in the case of banks and 20 years in the case of HFCs, co-operative housing societies and ARDBs.

If the housing problem is to be effectively tackled, it is necessary that alongside measures to increase the flow of financial resources for housing, concrete steps should be taken to augment the real resources also, i.e. land and building materials. NHB has ac-

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cordingly introduced its refinance schemes for scheduled commercial banks and later for select HFCs in respect of term loans given by them for Land Development & Shelter Projects (LDSPs) executed by public agencies, professional developers, co-operative housing societies as also for rental housing projects undertaken by public and private institutions for their own employees, in accordance with NHB's guidelines.

Under these refinance schemes, NHB provides 100 per cent refinance against the term loans extended by the primary lending agencies. For LDSPs of public agencies, cooperative housing societies and professional developers, the period of term loan and refinance can be upto three years and has to be co-terminus with the period of implementation including allotment and handing over. For rental housing projects, the stipulated period is maximum 10 years.

The main features of NHB's LDSP guidelines are (i) the project should be an integrated one including the land acquisition and provision of 'site' infrastructure, no refinance being available if the loan is only for acquisition of land, (ii) bulk of the plots/dwelling units should be of small size as prescribed by NHB, with the pricing policy tilted in favour of persons belonging to low income category and (iii) in allotment, preference should be given to members of the Home Loan Account Scheme.

So far as direct lending is concerned, housing loans granted for construction of new housing units having built-up area not exceeding 40 sq. meters i.e. about 430 sq. ft. or cost (including cost of land) not exceeding Rs. 1.50 lakhs are eligible for refinance. If the built-up area of the dwelling unit does not exceed 40 sq. mts., then loan of Rs. 2 lakhs also (whatever be its cost) qualifies for cent per cent refinance. No refinance is available for housing loans above Rs. 2 lakhs.

Loans upto Rs.30,000/- given for upgradation/major repairs of the existing dwelling units, irrespective of their built-up area, are also eligible for 100 per cent refinance. The interest rates to be charged by the banks to borrowers, which have to be as per RBI Directives range from 11.5% per annum on loan of Rs. 7,500/- to 16.5% per annum on loan of Rs.50.001/- to Rs. 2,00,000/-. NHB's refinance rates are 2% lower on loans upto Rs.50,000/- and 1.5% lower on loans above Rs.50,000/-. The same parameters and interest rate structure, as prescribed by RBI, are applicable to scheduled State co-operative banks with the difference that they are precluded from extending housing loans above Rs. 1 lakh. Besides, they have to satisfy the eligibility criteria as prescribed by NHB.

In the case of HFCs, their interest rates for ultimate beneficiaries, as prescribed by NHB, are 0.5 – 1.5 percentage points lower than those of commercial banks but the refinance spreads are same i.e. 2% lower in respect of housing loans upto Rs. 50,000 and 1.5 per cent lower for higher categories of loans upto Rs.2 lakhs. For apex co-operative housing finance societies, the loan slabs and interest rates are same as those of HFCs. Similar is the position for ARDBs except that they can grant housing loans only upto Rs. 1 lakh.

Under NHB's Refinance Schemes for LDSPs undertaken by public agencies, cooperative housing societies and professional developers also, the plots/dwelling units have to conform to the size parameters indicated in the chart. However, the rate of interest is to be related not to the total amount of the project loan but to loan amounts as apportioned to individual components, whether serviced plots, constructed dwelling units or non-residential units, based on which a Weighted Average Rate of interest for the project loan as a whole is to be worked out for being charged by the primary lending institution to the executing agency.

The rate of interest of NHB's refinance would be 1 per cent lower than the Weighted Average Rate. The rental housing projects of public and private institutions for their employees also have to conform to prescribed area parameters. The rate of interest or refinance for such projects is 15 per cent per annum subject to the condition that the interest charged by the banks/HFCs to the institutions will be 16 per cent per annum.

While in the LDSPs of primary co-operative housing societies, all members have to be depositors under the Home Loan Account Scheme, in the case of public agencies and professional developers, they are required to give preferential allotment to such depositors. Term loans to be extended by commercial banks/HFCs to public agencies and co-operative housing societies for executing NHB-approved LDSOs can be to the extent of 100 per cent of the project cost. In the case of LDSPs of professional developers the term loan cannot exceed 80 per cent of the project cost. As for rental housing projects, the term loan can be to the extent of either 100 per cent of the cost of construction (excluding land cost) or 75 per cent of the project cost including cost of land, whichever is less.

It is envisaged that term loans given by scheduled commercial banks/HFCs for LDSPs are adjusted out of the sale proceeds of plots developed/dwelling units constructed under the concerned LDSPs. To facilitate time adjustment of term loans by allowing access to housing loans for the allottees of plots/dwelling units needing financial assistance, NHB has introduced a separate Refinance Scheme.

Under that Scheme, there is no ceiling on housing loans but they are required to be granted after taking the allottee's repaying capacity into consideration. Proceeds of housing loans are required to be adjusted strictly towards repayment of the term loans for the relative LDSPs, whether extended by the same bank or some other banks/housing finance institutions and remitted fdirectly to the concerned banks/housing finance institutions.

NHB's Disbursements: As at end June 1991, NHB's cumulative disbursements to eligible housing finance institutions, scheduled banks and to ARDBS (by way of subscription to their SRHDs) were of the order of Rs.567.5 crores helping acquisition/construction of over 6.4 lakh dwelling units, of which 4.8 lakh units or 75 per cent were in rural areas. Of the cumulative disbursements, HFCs accounted for Rs. 475 crores (83.7 per cent), co-operative sector institutions, including ARDBs, 63.6 crores (11.2 per cent) and scheduled commercial banks Rs. 28.9 crores (5.1 per cent).

Building Materials: Commensurate with the expansion of credit and measures to increase availability of serviced land for housing, it is essential that availability at reasonable prices of building materials and construction components is also augmented. NHB hs accordingly evolved a Scheme for extending equity support to those building material industries which propose to encourage production of low cost building materials and construction components making use of locally available resources. Such units have to comply with the minimum share capital and other requirements as prescribed by NHB. So far, NHB has cleared 4 proposals with aggregate equity subscription of Rs. 1.16 crores.

Among the non-financial factors affecting housing, leagal impediments are considered to be the most formidable, inhibiting housing activity and thus leading to aggravation of the housing problem. Removal of legal impediments, which would facilitate larger flow of resources to the housing sector, involves amendments to several legal enactments such as the Transfer of Property Act, 1882, Civil Procedure Code, 1908, Rent Control Acts, etc. Some of these enactments come under the purview of Parliament while others fall under the jurisdiction of the States.

NHB has already initiated the process by soliciting comments from the State Governments and various other agencies connected with housing. However, the amendment process, by its very nature, is time-consuming. Therefore, in the meantime, NHB is proposing amendments to the National Housing Bank Act to provide for simpler arrangements for creation of charge on the properties and enforcement of claims by housing finance institutions and scheduled banks which have entered into refinance agreement with NHB.

Resource Mobilisation: Housing shortage in the country is of colossal magnitude. Hence, vast resources are needed to tackle the housing problem. Keeping this in view, NHB introduced, in co-operation with the scheduled banks, the Home Loan Account Scheme (HLAS) from July 1, 1989. The basic objective of HLAS is to inculcate a 'national' habit of saving among potential house-owners, to whichever income strata they may belong, in advance of their decision to acquire a house/flat.

Thus, under HLAS, the minimum contribution fixed is Rs. 30 per month (i.e. Re. 1 per day) or Rs. 360 per year. There is no ceiling on the amount that can be saved. Deposits under HLAS earn interest at 10% per annum. Any individual not owning a house anywhere in India is eligible to join HLAS. The member, after saving for a minimum speriod of 5 years (3 years if he is an allottee of a dwelling unit under NHB-assisted LDSP) is eligible for a loan in multiples of his accumulated savings (including interest), depending on the amount of loan he requires, as indicated below:

Amount of Loan (Rs.)	Loan as multiples of accumulated savings	Rate of interest per annum
Upto 50,000	Four times	10.5%
50,001 to 1,00,000	Three times	12.0%
1,00,001 to 2,00,000	Two Times	13.5%
Above 2,00,000	1.5 times	14.5%

It will be observed that the rates of interest on loans are highly concessional as compared to the normal rates shown in annexed chart. The deposits collected under HLAS till March 1991 were Rs. 84.6 crores. With a view to making HLAS more attractive, certain relaxations like enlargement of the target group so as to include persons already owning houses, allowing withdrawals for paying instalments towards purchase of a plot/house from a public agency, co-operative housing society, etc. are contemplated, after they are approved by the Central Government.

NHB's resources come from the share capital contributed by RBI, soft loans made available by RBI out of the National Housing Credit (Long Term Operations) Fund and through issue of Central Government guaranteed bonds, as per the allocations made by RBI. In July 1990, NHB launched its Capital Gains Bonds Scheme. These bonds have a maturity period of 3 years and carry interest at 9% per annum, which is payable half-yearly or on a discounted basis in the beginning itself.

Under Section 54E of the Income Tax Act, 1961, investment in these bonds qualifies for 100 per cent tax exemption on capital gains arising out of sale/transfer of long term capital assets like land, buildings, shares and securities, jewellery, etc. The bonds are neither transferable, assignable, negotiable nor is there any provision for their premature redemption. The Scheme is being operated by NHB through select commercial banks which have designated over 150 of their branches throughout the country for the purpose.

NHB is empowered to resort to foreign currency borrowings. Soon after coming into existence, NHB negotiated a loan of US $ 50 million under the USAID Housing Guaranty Programme. The period of the loan is 30 years. The funds are to be utilised for providing long term finance to households below the urban median income. In April 1991, NHB drew the first tranche of US $ 25 million. The Overseas Economic Co-operation Fund (OECF) of Japan also has entered into an agreement with the Government of India to extend loan assistance of Japanese Yen 2.970 billion under the Housing Programme for low and median income households through NHB.

Recently, the Central Government has enacted the Voluntary Deposits (Immunities and Exemptions) Act, 1991 under which NHB's Voluntary Deposit Scheme has been notified. Under the said Scheme, any person holding unaccounted money can make a deposit with NHB on or before November 30, 1991. Of this deposit, 40 per cent would be transferred to NHB to be utilised for financing slum clearance and low cost housing for the poor, in accordance with the guidelines issued by the Central Government.

The balance amount can be withdrawn by the depositor in one or more instalments through 'Account Payee' Cheque(s) for any stated purpose of his choice, without any lock-in period. Such persons are not required to disclose the source of funds from which the deposits are made. The Scheme has been launched on October 1, 1991 through 9 public sector banks which have designated 855 branches in the various States and Union Territories for the purpose.

Eventually, it is only through development of a sound secondary mortgage mechanism that it would be possible to mobilise sizeable resources for the housing sector. For such a mechanism to become operational, a mortgage instrument which offers attractive yield and is liquid, i.e. freely transferable and hence acceptable to the investors, would have to be evolved.

This would presuppose creation of congenial legal environment through simplification of mortgage creation foreclosure procedures which at present are cumbersome and time consuming. The overall financial climate also would have to become favourable. It is hoped that the recent policy initiatives taken by the Government on the economic front and steps taken by NHB on the legal side would lead to creation of an atmosphere in which secondary mortgage market can evolve and thrive.

With the idea of diversifying NHB's activities so far as mobilisation of resources is concerned, the Government of India has notified NHB as a 'public financial institution' for the purpose of Section 4A of the Companies Act, 1956. The said notification would enable NHB to set up a Mutual Fund and launch other schemes to garner resources from the households.

A series of important measures have been taken during the last four years which have resulted in creating an atmosphere in which the housing sector is getting the focus it deserves. Much more needs to be done. As has been emphasised by the High Level Group, any strategy to be evolved for tackling the gigantic housing problem can be expected to meet with success only with the active participation as well as concerted and cohesive efforts of all concerned, viz. the Government, public and private sectors as also the co-operative sector and NHB. Hopefully, the National Housing Policy to be announced by the Government will set the tone for such collaborative action leading to eradication of houselessness in the country in the foreseeable future.

By **S.D. Hosangadi,**
General Manager, National Housing Bank,
Bombay.

(The views are personal to the author and do not necessarily reflect those of the institution)

Habitat Centre

About 25 housing and habitat-related organisations will soon have a new common address. The India Habitat Centre, a sprawing complex spread over about 3.88 hectares of land on Lodhi Road in south Delhi, is fast nearing completion.

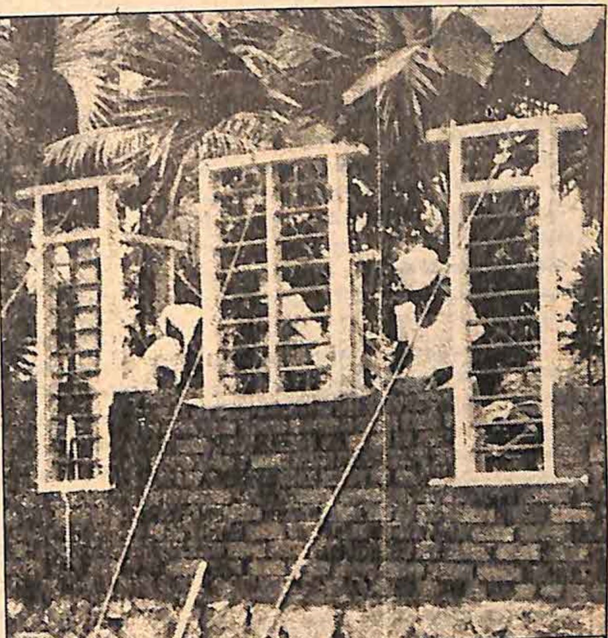
The complex will house various organisations providing them with office space, common research facilities, conference rooms, library and documentation centre on habitat, environment and related subjects besides a 500- seat auditorium.

The India Habitat Centre (IHC), tha brainchild of the Housing and Urban Development Corporation (Hudco), was planned in 1987 with the setting up of the India Habitat Centre society with the Union and state ministers for urban development as its patrons.

The society invited agencies engaged in the field of housing, urban development, living environment and other habitat related subjects to enroll themselves with it and apply for space in the complex as members. "The response was tremendous and we eventually finalised about 22 names", says G.S. Ahuja, executive director of the Centre.

The organisations selected include Central Building Research Institute Centre for Science and Environment, Council of Architects, Delhi Development Authority (slum wing), National Council for Cement and Building Materials (NCCBM), Delhi Urban Arts Commission, Sulabh International, All India Management Association and the Institute of Social Studies Trust. ■

Rubber wood'll cut cost



Costs of building materials are shooting up, but innovative hands have put rubber wood to building and furniture material, which promises to reduce the cost of timber by almost half and also to arrest the dangerous erosion of the country's forest cover.

Rubber wood, which was indiscriminately burnt as fuel, is today adorning several households as furniture of exquisite design and also building materials like doors and windows. The lower price range for these building materials could make house construction and furnishing of it a reality for millions middle class Indians.

Increasing entry of the once redundant rubber wood into the timber market has not only lowered the cost of quality wood, but also promises to open out new vistas for exports.

Countries like Malaysia, Indonesia and Thailand have already capitalised on the craze for natural things in the developed world by exporting high quality rubber wood furniture which are effectively competing with the plastic and metallic furniture of the developed world. They have already captured markets in the United States, Europe and Japan.

The state-of-the-art technology in processing rubber wood and the latest developments in research and development are available in neighbouring Sri Lanka where a project was initiated as early as 1968 with the assistance of UNESCO, United Nations Development Programme and the U.S. Agency for International Development.

Considerable progress has also been made within the country, with pioneering research undertaken at the Forest Research Institute, Dehra Dun, the Institute of Wood Science and Technology at Bangalore and the Kerala Forest Research Institute at Peechi in Kerala.

But, in the absence of sufficient guidance even today, one million cubic metres of rubber wood available in the country goes waste. A small portion of it goes into the making of packing cases, while the rest is indiscriminately burnt as fuel wood.

Over one lakh hectares of rubber plantations well beyond the age of rubber production are awaiting the axe, slaughter tapping. And, as the years roll by, more and more areas will come under the same process and precious resources of the country will be wasted.

Already, the South India Timber Industries (SITI) based at Kottayam in Kerala sells exotic furniture made from processed rubber wood at half the price of standard wooden furniture. They are supplying rubber wood building materials too. Research institutions have estimated the lifespan of these furniture at 25 years, equivalent to that of normal hardwoods.

SITI uses special treatment for rubber wood, which is then seasoned and the defective wood separated. The unit is today besieged with demands for agency rights in other southern states and cities in Kerala. With the burgeoning domestic demand, SITI has cut out its exports to Malaysia and Japan where they had traditional markets. But, another company under Aspinwal, Aspinwood, has entered rubber wood exports in a big way.

Small Thinks By Laurie Baker

I find a lot of people are rather pessimistic about housing and urban development, particularly in view of the vast size of the problems confronting us. I have a feeling that we tend to push the whole situation to the very back of our minds and desks because we simply cannot envisage 'millions'. A lakh is our limit.

I find matters become a little less hopeless if we try and break down our astronomical figures into something that we, even on our own, could tackle. For example divide these millions by the number of villages and wards in the country and we get a figure of forty odd families. No problem!

Go off to an average village and track down the forty families who are supposed to have nothing and you immediately bring in a personal relationship with an actual client–a real person and his dependents. You can find out what 'homeless' actually means.

For example in Kerala along the coast you look into a fishing village and go into a hut of thatch and you will find a fisherman and his family, some of them being already grown men with their 'family' also living in the same one room hut. A dhoti or a net acts as a partition wall. We can then think of additions, or alterations, or of finding a bit more land.

Or you visit a tribal colony. To them the 'house' may be only a bad-weather shelter and a store. They instinctively know all about 'incremental planning' and their problems are more connected with cattle and live-stock, with water

How to reduce

- If you have to build your house on a terraced site, it is less expensive to place it in the middle of the terrace.
- If the site is a sloping one, less excavation & less filling up is needed if you place the building parallel to the contours and not cutting across the contours.
- For small single and double storey houses an 18" (45 cm) wide foundation base is usually fully adequate on most soils and there is not often the need for the wider concrete layer beneath the basement wall.
- After building a house there is often little cash left over for furniture. Built if seats, beds, work tables, etc. can easily and inexpensively be had, merely by building the basement wall to a suitable height it is a great saving.
- If burnt-brick is available, and if a 9 inch thick wall is required, 25 % of the total number of bricks, and of the cost of the wall, can be saved by using a "RAT-TRAP" Bond.
- It is simple to build, looks well, has better insulation properties and is as strong as the ordinary solid 9" brick walls.
- From a structural stability point of view, a 41/2" thick brick wall is often adequate for small single storey houses, and certainly for interior partition walls. It can be made stronger with thin buttresses every five or six feet or if recesses are created. These recesses can be used for shelves and almirahs at almost no extra cost!

- Some building materials are there for the using. Cut them, or dig them out and carry them to the site, and they are ready to use, Some such materials need shaping and trimming.
- A variety of the mixes of cement, sand, lime and surkhi (which is a finely ground burnt clay) are available to give different plasters and mortars. Lime and sand can give an equally strong mortar but it takes longer to set. This can be solved by adding to the lime, or lime and surkhi mixes, a small amount of cement.
- Bricks are often slightly irregu-

supply and with access to forest materials. Even if my brief is to design 500 E.W.S. houses, what sort of an architect am I if I decide that one or two 'type disigns' will do? The rich variety of our vernacular housing with no two huts identical still excites me far far more than any of the latest high rise wonders that the world's top notch architects put up.*

These days we are always hearing about our great 'heritage'-culture architecture and so on. But are we really interested in what all our children are going to inherit from us?

I see only one way ahead-we have to personalise our architecture-we have to develop personal relationships with clients (people with names, not categories) with craftsmen, technicians and with athe resources of our country.

My grandmother told me that in Scotland they say "Many mickles make a muckle'. If my interpretation is correct, I think I agree!

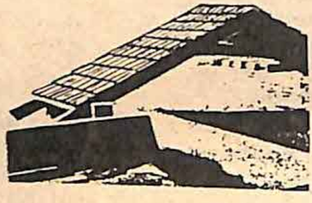
* Economically Weaker Section

building costs

lar in length. Simple mortar can fill over the sunken end of the brick to produce a special fair face on the second side of the wall.

- Lintels are not necessary over door and window openings up to four feet in width. Ordinary brick-on-edge is all that is required.
- Brick arches are much less costly than neinforced concrete lintels. They are just as strong and look much nicer than concrete and can be of a veriety of shapes.
- Windows are costly. One square foot of window can cost up to ten times the cost of the simple brick or stone wall it replaces. In many situations a "JALI" or "honeycombed" wall is just as effective.
- Doorframes cost a lot of money and are often not actually necessary. Planks can be screwed together by strap iron hinges to form a door, and this can be carried by "hold-fasts" built into the wail, thus eliminating the outer door frame altogether.

- The simplest door is made of vertical planks held together with horizontal (sometimes diagonal) battens.
- Floor: After the roof is on. collect alll the broken brick bats and lay them side by side, touching each other, on the rammed earth.
- Anyone who can use a saw and a hammer can put together a simple strong roof of timber over rooms upto 12 feet (3.65m) wide. Three pieces of wood are nailed together and this simple "trussed rafter" sits directly on top of any wall.
- Roofing: As there is quite a lot of unnecessary concrete in an orthodox R.C.C. slab. An alternative R.C.C. roof is called a FILLER SLAB. For fillers light weight bricks, or Mangalore or country tiles, or hourdies, etc. could be used.
- Architects, designers and builders put a lot of little 'extras' on to their buildings to make them, they think, look "nice" or look "fashionable", or to "compete" with neighbouring buildings. Usually these gimmicks serve no useful purpose and merely add unnecessarily to the cost of the building.



Ferrocement Substitute For timber

Ferrocement is cement mortar reinforced by fine distribution of steel in order to raise its tensile properly and reduce its weight. Usually weldmesh or chicken mesh are used as reinforcement.

All forest-rich countries are perhaps under the impression that they have adequate timber wealth to take care of the use of timber even in places where other materials will adecuately serve the purpose. In India, the deforestation is taking place at a threatening pace.

The use of timber continues in such applications as rafters, beams and reapers below tiled roofing, joists terrace roofing, poles for transmission of power and telecommunication. etc. In good majority of these applications, replacement of timber by reinforced concrete or prestressed concrete has been attempted.

However, these elements are much heavier than the timber and have low cracking properties of concrete. Such products when transported over long distances more than offset the savings that one estimates in its substitution. Due to the weight of the element, 3–4 times that of alternative in timber, the transport cost forms 20 to 30% of concrete product cost.

It is this negative property that ferrocement elements will tend to compensate. The Structural Engineering Research Centre, Madras has done extensive R & D work on ferrocement. The earlier works were very widely accepted and employed in ferocement products such as water tanks, service core units and grain storage bins. This work was continued to the new area of development of substitutes for timber, rafters, reapers, planks, and cupboards were developed at the Centre, Field applications were also made to demonstrate the viability of this material and its products.

Ferrocement rafters can be used for supporting tiled roofing. These rafters spaced at approximately 750-1000 mm and in span ranges of 3.6-6 m will have a conventional timber scantling of size 25 mm x 50 mm. The ferrocement rafters are also of sections equal to timber but made in I-Section.

They are made to the profile and assembled together by using steel bolts and nuts. Spanning between these rafters, the normal reapers can be replaced by ferrocement trough units which can directly receive the country tiles. Serving as the water proofing element, the trough units also provide good ceiling finish. Such rafters can be mass-produced.

The calculated steel as reinforcement is provided in the body of the rafter in addition to providing normal weld mesh and chicken mesh distribution steel. It is even possible to improve the performance of such sections by marginally stressing the welded mesh element on a long line stressing bed.

With the availability of concrete cutting saws, It should even be possible to make these rafters on long line stressing bed, like rolled steel joists and make them available in the market as ready to use elements.

If the requirements are for small housing schemes with leaf-to-roofs, monolithic ferrocement trusses can be made in any desired profile. These trusses and their sections and reinforcement can be designed to match the loading requirements.

The welded mesh required for the truss is cut and fabricated to the desired profile. Around this skeleton two layers of chicken mesh are woven and placed in an appropriate mould. Into the mould, placed horizontally on a casting platform, fine cement mortar is placed and compacted. Unlike for structures in contact with water, like boats and water tanks, higher cement ratio is not required for the mortar used in such flexural members. 1:3 or leaner mix can be employed. If vibration facilities are available such mortar could gain strength upto 30.0 N/mm^2 at 28 days.

As a substitute to timber, products were developed in the form of cupboards for application in housing and other buildings where storage facilities are required. A large number of such cupboards were made and applied as a field application in the Trainees' Hostel of SERC. These cupboards can also be fabricated in modules and assembled together.

Land of Laurie Baker, Kerala launched a Revolution..........

For housing it is A Model

The housing shortage in Kerala is currently assessed at one million. A notable feature of Kerala's development process has been the absence of rural-urban polarisation. Characterised by certain physical quality of life indices such as high literacy, high life expectancy, low infant mortality etc., Kerala stands ahead in the country. During the first 30 years of planning, the work force in agriculture in Kerala has declined from 53.6% to 41%, against an almost marginal level of decline from 69.8 to 66.7% in the national scence. Most Kerala villages have at least one school, one public library, one primary health centre, one post office, one ration shop and the like. Electricity has reached most villages, though the quality of power supply leaves much to be desired.

Land reforms were implemented in Kerala since 1970. Along with agrarian reforms, the state bestowed its attention on many social welfare measures like unemployment relief, pension for widows, agriculture workers and promoted widespread public housing schemes. Like in literacy and labour welfare, the lead role of Kerala in improving the quality of habitats and mass basing the housing schemes have emerged as an ideal growth model. While governmental policies have helped housing development in the state in a big way, the bold and innovative approaches by some voluntary agencies and professionals with missionary zeal have fortified the efforts.

One Lakh Housing Scheme: The first ever massive housing scheme undertaken in Kerala was during the mid seventies, when during the fourth five year plan period, housing became a state subject and the then Minister for housing M.N. Govindan Nair under the C. Achutha Menon Ministry launched the 'one lakh housing scheme'. These houses almost equally spread, 100 each in all the nearly 1000 panchayats in the state were meant for beneficiaries selected from among the poorest of the poor, scheduled castes and the like. Each house was to have 250 sq.feet area.

For these houses, construction timber was released from the forests, bricks were made locally, donations were raised from the public and the construction was managed by the panchayats. The programme was a great success with about 57,000 families benefitted and still remains the biggest such state intervention in mass housing in the country.

The rate of growth of housing stock in Kerala during the latter half of seventies was an unheard of high even for fast-developing economies. During this period, the state's investment in housing was more than double the original plan outlay. Such a huge investment in this sector also had its impact in the society in skyrocketing the cost of land and the price of construction materials. The scheme had only two drawbacks–one, the houses were based on type designs; two, the beneficiary participation in planning and construction was absent. These were built, in some cases on donated lands, and handed over to the beneficiaries with the result, even for elementary maintenance, the beneficiaries were looking forward to state involvement. Also, water supply and such other amenities were not part of the package.

Baker makes a breakthrough: Early seventies saw Laurie Baker's ideas on mass housing. Laurie Baker can rightly be called the architect of the poor. A product of the Bermingham School of Architecture, the British-born Baker later became a citizen of India. His architectural contribution to India started in 1945, being influenced by Gandhiji, took the form of a movement after 1970, when he had chosen to settle in Thiruvananthapuram and started propagating 'low waste' construction technology.

However, his movement did not have a smooth sail, even in the highly progressive Kerala soil. The conventional engineers, Public Works Department and many governmental engineers and architects stuck to the rule book and the 'PWD Schedule'.

Baker believed that, for solving the housing shortage for the rural as well as urban poor, who forms the lion's share of the homeless, new criteria for cost reduction is a must. Wastage due to over design, use of expensive materials, lack of awareness on the part of workmen and the owner and unscientific organisation and management of construction work should be avoided totally. He also emphasized that high energy consuming products such as cement and steel should be very sparingly used in construction.

The basic tenet of Baker construction is to merge the buildings with environment, by keeping to the land profile to the extent possible, use of locally available materials, orienting the building and shaping the roof and other parts taking due note of the climatic conditions in the area, life styles and occupation of the family members etc. In order to reduce the consumption of steel and cement, he introduced the filler slab construction using two layers of low quality roof tiles one over the other.

By effectively using arches and corbels, the need for reinforced lintels was almost totally avoided. Baker also proved that country bricks, sun-dried bricks, mud blocks and even mud as such could be good enough building materials, which provided adequate structural strength, security and durability. The use of timber was also minimised by eliminating door and window frames and by the use of brick work jallies for effective ventilation. The thermal comfort inside the building was ensured by the use of rat trap bonding (use of bricks creating a cavity throughout the wall height, thereby saving about 25% on bricks as well), the trapped air between the filler tiles in the roof as also in midfloor in multi-storied buildings etc. Plastering was, as a rule, avoided. The outer walls were protected from rain by extending the roof as in the traditional construction.

Baker has the highest regard for the time-tested construction practices of each region which merged very well with the climatic peculiarities of the area. Baker's concept also insists that a well ventilated kitchen however small it may be, a sanitary latrine for every house, provision of three separate sleeping areas for adults and children even by makeshift arrangements, extendability of the structure when the family grew in size–all these are to be incorporated into the design of a house for dignified living of its occupants. Baker never likes type designs.

Individual houses, involving the user in its conception, design and construction is the hallmark of Baker houses. The idea has since caught the imagination of the public and the Govt. in Kerala, as well as in most other states of India and in countries abroad.

Baker has been conferred the 'Padmasree' by Govt. of India, the habitat award in 1987 by the Ministry of Urban Development and HUDCO, and a special recognition by the Royal Govt. of the Netherlands for his demonstrated strides in the area of housing for the masses. His efforts are a model for governments as well, as he helped to replace govt. housing programme with people's participation by people's housing programme with Government participation, as the only way for solving the mammoth housing problem in the developing countries.

Baker's epoch-making intervention in housing brought to light two points. If people are to benefit by his approach, the same should reach them in terms of architects and designers who believe in it trained masons and other skilled workers in the locality who can build them, awareness among the public to ensure their acceptance and involvement in the whole process and availability of materials of construction.

The task of training adequate number of practicing believers was undertaken on a large scale, first by the Centre of Science and Technology for Rural Development (COSTFORD) chaired by former Chief Minister C. Achutha Menon till he expired in 1991. The efforts were partly supported by the Science & Technology Department, Govt. of India and the Kerala State Committee on Science, Technology & Environment. COSTFORD also undertook construction of a number of houses and public buildings mostly in Thrissur District.

In fact credibility of the approach gets a boost when public buildings go the cost-effective way. The worth of Baker technology was powerfully demonstrated in the campus of the Centre for Development Studies at Thiruvananthapuram established in 1971 by the Govt. of Kerala under its Science and Technology policy. All the buildings in the campus, academic areas, hostels, guest house and the staff quarters were built by Baker in the seventies and still remain a congenial environment for academic experiences of international excellence.

Nirmithi Kendras: It was in 1985 that a young District Collector in Kollam district, C.V. Ananda Bose, came up with the idea of establishing effective delivery systems for the cost effective construction technologies. Realising that housing the millions is a gigantic task and creating awareness and availability of knowhow in this regard is a challenging job, he conceived a separate registered society called the Nirmithi Kendra for the district in 1985. The idea was well accepted and the Kerala Government decided to estabilish similar building centres in all the districts of Kerala, now numbering 14.

The Nirmithi Kendra concept was soon taken up by the Union Government and suggested as a model for other states. At present, there are about 160 Nirmithi Kendras in India. In Kerala, a state level Nirmithi Kendra is also functioning, with the object of co-ordinating the activities in this sector. These centres focus on the delivery system such as 1) Training of engineers and masons. 2) Mass production of cost effective building components. 3) Establishing retail outlets for sale of such pre-fabricated and other materials. 4) Undertaking actual construction of cost effective buildings for establishing credibility among the villagers and 5) Adaptive research to suit local requirements and remedy problems arising at actual implementation level.

It is also within the mandate of these building centres to organise exhibitions and demonstrations for increasing the awareness among the public. As a deliberate attempt to establish credibility, many district administrations embarked upon construction of village offices, anti-disaster shelters and the like using the cost effective technology.

Such construction innovations have flourished in other parts of the country as well. The efforts of the Application of Science and Technology to Rural Areas (ASTRA) group at the Indian Institute of Science, Bangalore has been very well known outside Karnataka, especially in the areas of Energy and Building. ASTRA has a scientific approach in making systems studies, studies related to walls, roofs, construction etc. The systems studies covered, based on a survey of rural housing, the development of a systems approach to rural building technology, a study of the role of transport in building activity and determination of energy content in the building materials.

Various alternative types of walls such as rammed earth, soil cement block, compacted mud blocks etc. have been studied and propagated with immense success. Ferrocement, bamboo-polythene-lime surkhi roofs, etc. were also investigated and demonstrated. Through their extension centres, the new cost-effective, locally relevant building technologies have been widely propagated by ASTRA. Among the veterans who propelled ASTRA right from its inception in 1974, the name of eminent energy expert Dr. A.K.N. Reddy and figure Prof. K.S. Jagdish figure uppermost.

Yet another national voluntary agency working in the field of low cost housing, experimenting with bold and innovative technological adaptations is the Development Alternatives, led by Dr. Ashok Khosla with headquarters in New Delhi. A number of innovations in terracota, use of ferrocement micro-concrete roofing tiles and mud architecutre are being tried by Development Alternatives.

Shirke group of Pune and Vastu Shilpa Foundation of Ahmedabad are also notable agencies which have made imprints in the propagation of new and innovative construction technologies.

Technology inputs: While concepts, broad guidelines and new technological approaches in cost effective construction could start off with it, continued efforts in appropriate modification, adaptive technologies and effective production and delivery systems are essential for quicker realisation of the objective of bridging the housing shortage in our country-especially due to widely varying climatic and living conditions in our great country.

Introduction of hollow blocks for saving in construction material, reducing the weight of building and also for improving the thermal comfort in the interiors has been getting wider recognition. While use of hollow cement blocks as wall material has got established, not necessarily as a cost saving technique, recent attempts for use of terracota more effectively in this area has come out very successfully.

Attempts of R.K. Ramesh of Jose Ramesh Babu Architects, Kozhikode through Brickbond Shelters Pvt. Ltd., in evolving a time saving and cost saving construction practice with increased thermal comfort, essentially using specially designed hollow clay blocks, filler slab principle and partial pre-fabrication and reduction in use of timber have earned him a national award for excellence in architecture. Ramesh could achieve better and streamlined surface finish for low cost construction and additional saving in maintenance costs, apart from initial savings of the order of 30% in cost and reduce construction time considerably.

While CBRI and such other institutions have involved themselves in the all important area of research into building materials, a number of innovative approaches have been made in Kerala which in turn gave added momentum to the mass housing movement. Dr. A. Achyuthan, Dr. K. Vincent Paul and Dr. T.S. Balagopal and others in Kozhikode Regional Engineering College and Prof. M.M. Thomas and Prof. Raghuveeran and others in College of Engineering, Thiruvananthapuram deserve special mention for their contributions to this movement.

A successful mission breeds more missionaries. Laurie Baker's 'one man institution' in the early years of the crusade could attract isolated individual engineers and architects who were very serious of learning Baker's philosophy, learning cost saving approaches and fanning out in groups, for participating in the cost saving ventures. Very prominent among the disciples of Baker are da Cunha and Ramesh Pandelker in Goa and Gayatri and Padmakumar now with HUDCO. V. Sankar an engineer-constructor in Thiruvananthapuram associated with Nirmithi and Mr. Benny Kuriakose, who established a low cost construction group with the people's science movement of Kerala viz. Kerala Sasthra Sahitya Parishad (KSSP) and its Integrated Rural Technology Centre at Mundoor, Palakkad are also in the low cost scene with their own preferred variation of ideas of Baker's. T.R. Chandradath of COSTFORD, Thrissur is another Baker enthusiast currently managing the training and propagation activities of COSTFORD.

The presence of these groups as well as the enthusiasm of HUDCO, in encouraging these approaches led to the creation of an atmosphere in Kerala, where the responsibility for eradicating homelessness is shared by many at various levels. There are at least 16 different agencies in Kerala in the mass housing scene. The Kerala Government and the State Housing Board have implemented through the District Collectors a scheme called Kairali, wherein soft loans upto Rs. 10,000 are extended to the public. Kerala has crossed the one lakh house a year target proposed for five years as a part of the international year of shelter for the homeless.

A notable feature is the existence of a number of housing schemes, aimed at different economic strata and occupational groups. Subsidies, and loans at lower than bank rates have been offered to two lakhs of beneficiaries in three stages under the rehabilitation scheme for the weakeer sections. Separate loan schemes are available for Government employees, teachers, journalists etc. Public sector employers also have been planning housing schemes for their own employees.

Assistance is being given to the beneficiaries of the first one lakh housing scheme for repair and upliftment. A number of co-operative housing schemes as well as schemes by private developers are also thriving well in Kerala. Banks, religious institutions and the like also have been enthusiastically participating in giving the required impetus to the housing efforts.

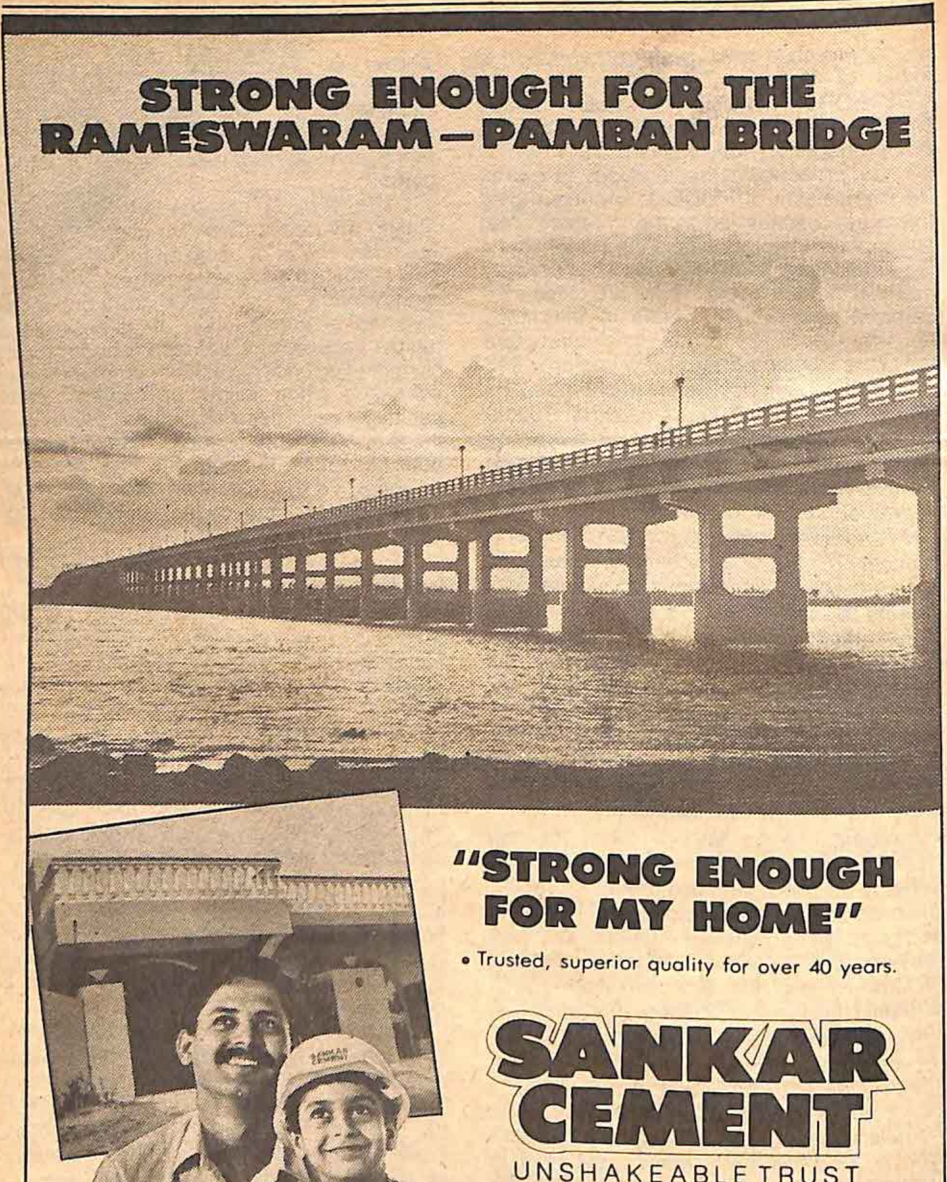
By co-ordinating a number of schemes, District Collectors have been giving shape to new packages of collective assistance to the homeless. Former Dist. Collector K. R. Rajan who headed the first literacy movement in Ernakulam District, announced a 'House for All' scheme for Ernakulam District to be completed in five years. One lakh new homes had to be constructed during this period in the district. The then Kottayam Dist. Collector Alphonse Kannanthanam aimed at making Kottayam town a slum free down. All these show that the eradication of homelessness has acquired prime importance in the development plans.

The task is not that of finding resources alone. In fact, the other end of housing spectrum saw almost 48% of the estimated Gulf money inflow of Rs. 15,000 crore being invested in construction of ostentatious residential buildings, reclaiming paddy lands, skyrocketing brick prices and commandeering increased trade inflow of cement, steel, sanitarywares, decorative tiles, paints and the like. This boom however did not help the poor homeless, but only put more pressure on them. To the majority, materials saving, money saving, time saving, trouble saving-all these assume importance.

There is none who would want to wait long for his dream house to take shape. Time, therefore, is the essence of the housing revolution. General awareness is yet another factor. Governmental policies ensuring social equity are equally important. The high literacy rate and physical quality of life in Kerala have helped in creating an urge for a better home environment. In view of the heavy rainfall and the highly humid atmosphere, materials and methods have to be highly location specific. The emphasis given on governmental schemes for weaker sections, as well as on provision of a smokeless chulah and a sanitary latrine in most of the newly constructed houses-even in the smallest of them-augurs well for Kerala's marching ahead in housing, both in terms of quantity and quality, and in retaining the democratic nature.

Baker, COSTFORD, Nirmithi and several others have already succeeded in instilling awareness all over about practising economy in the housing scene. The proposed Institute of Habitat Management under Kerala Government, one hopes, will be an extension of the ongoing programmes too and will uphold, among other things, the Baker principles as the basic tenet.

–By **Prof. V.K. Damodaran,**
Director, Science,
Technology and Environment,
Thiruvananthapuram.



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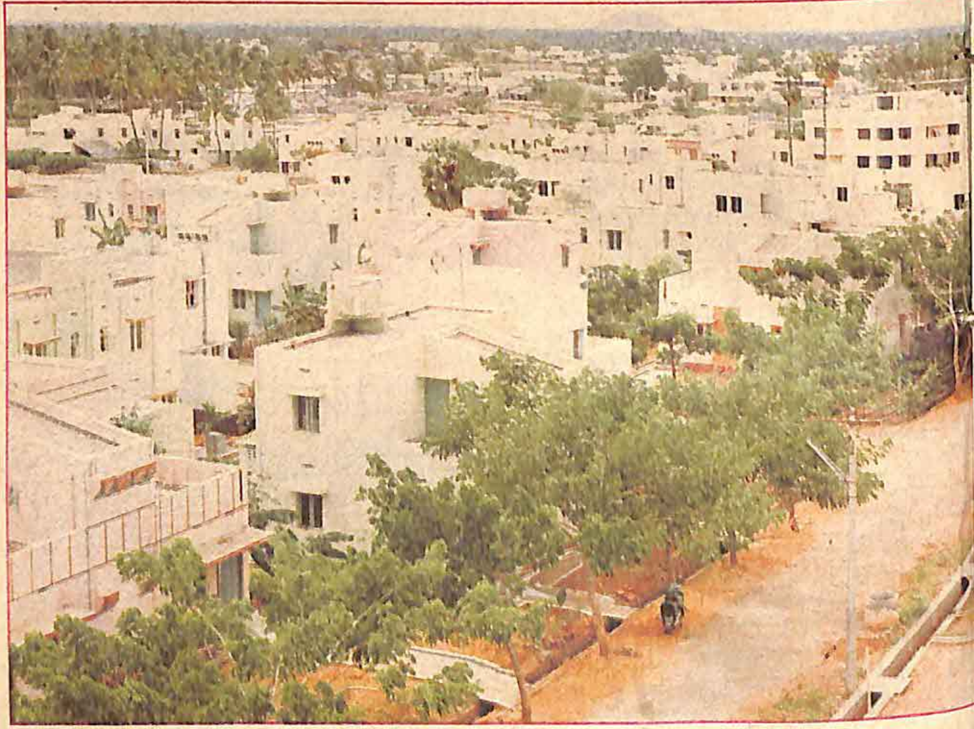
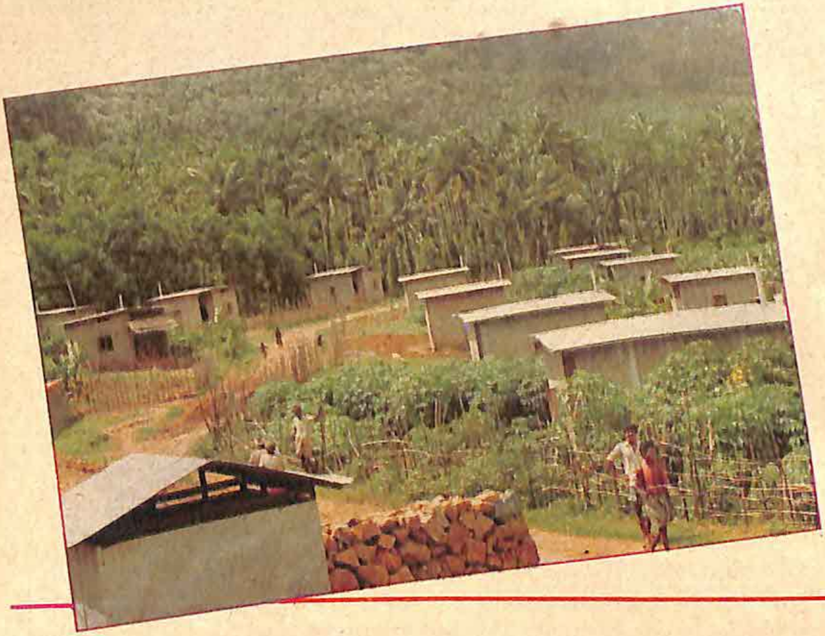
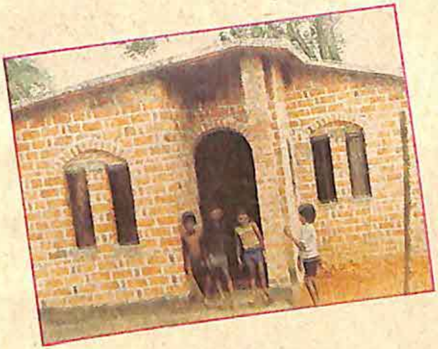
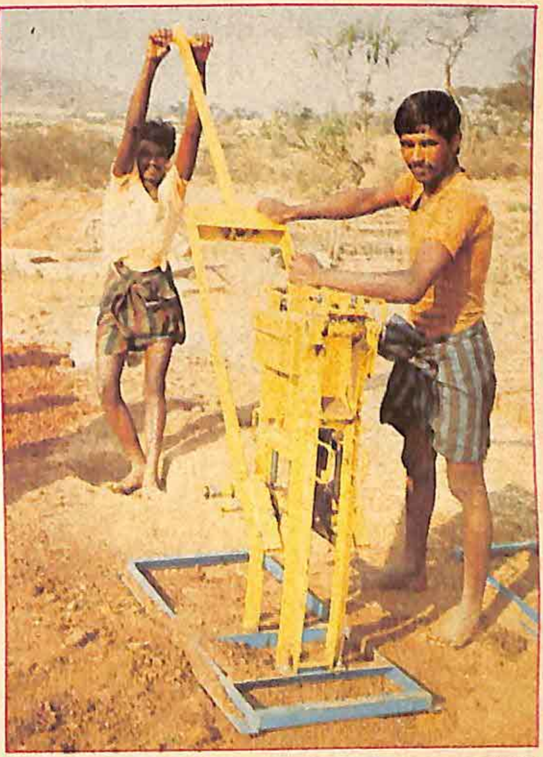


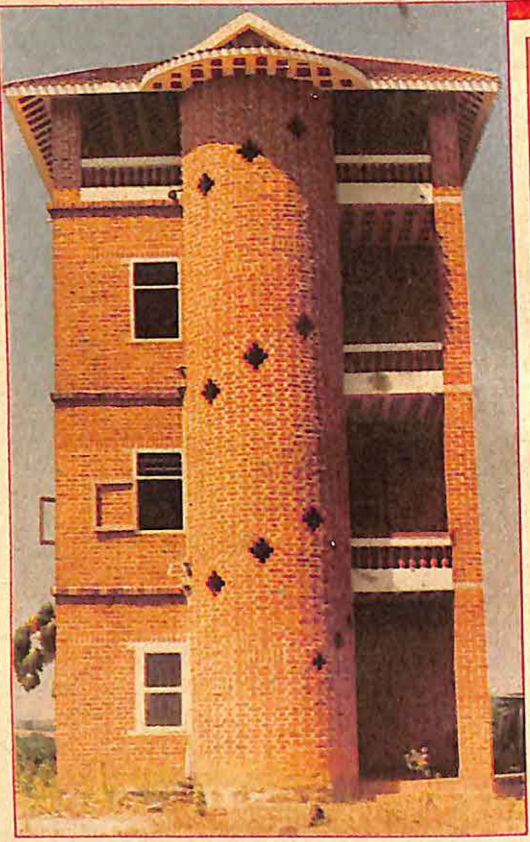


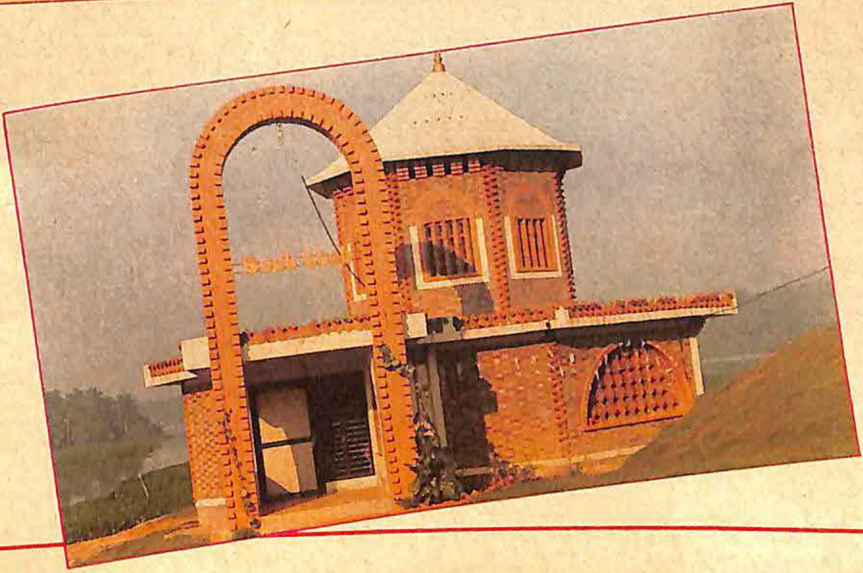
Revolution in the making: HUDCO tackling the massive human settlements problem–a shortage of 25 million houses now and 40 million houses by 2000 A.D. ASTRA promotes down-to-earth technologies–houses by soil cement blocks.

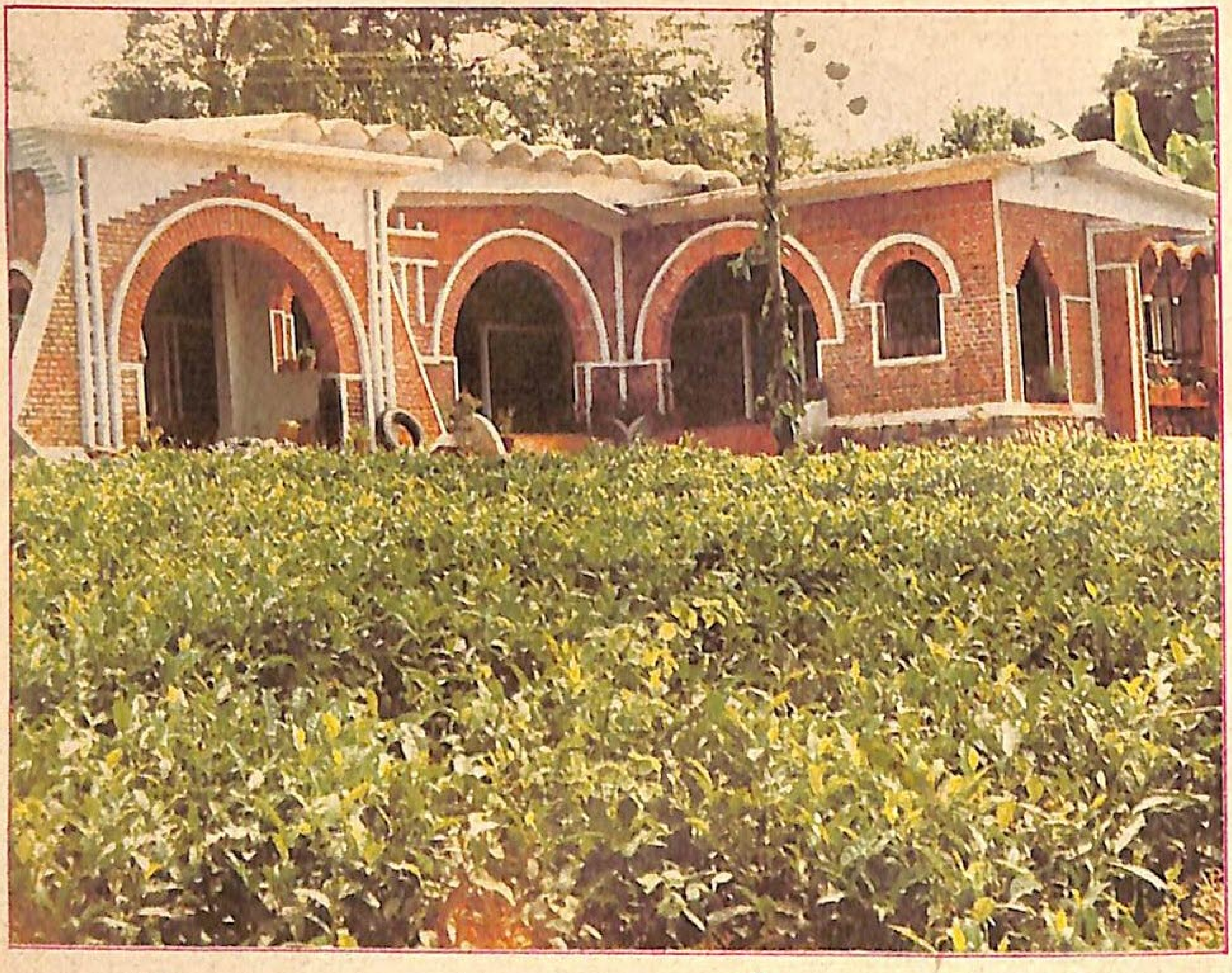


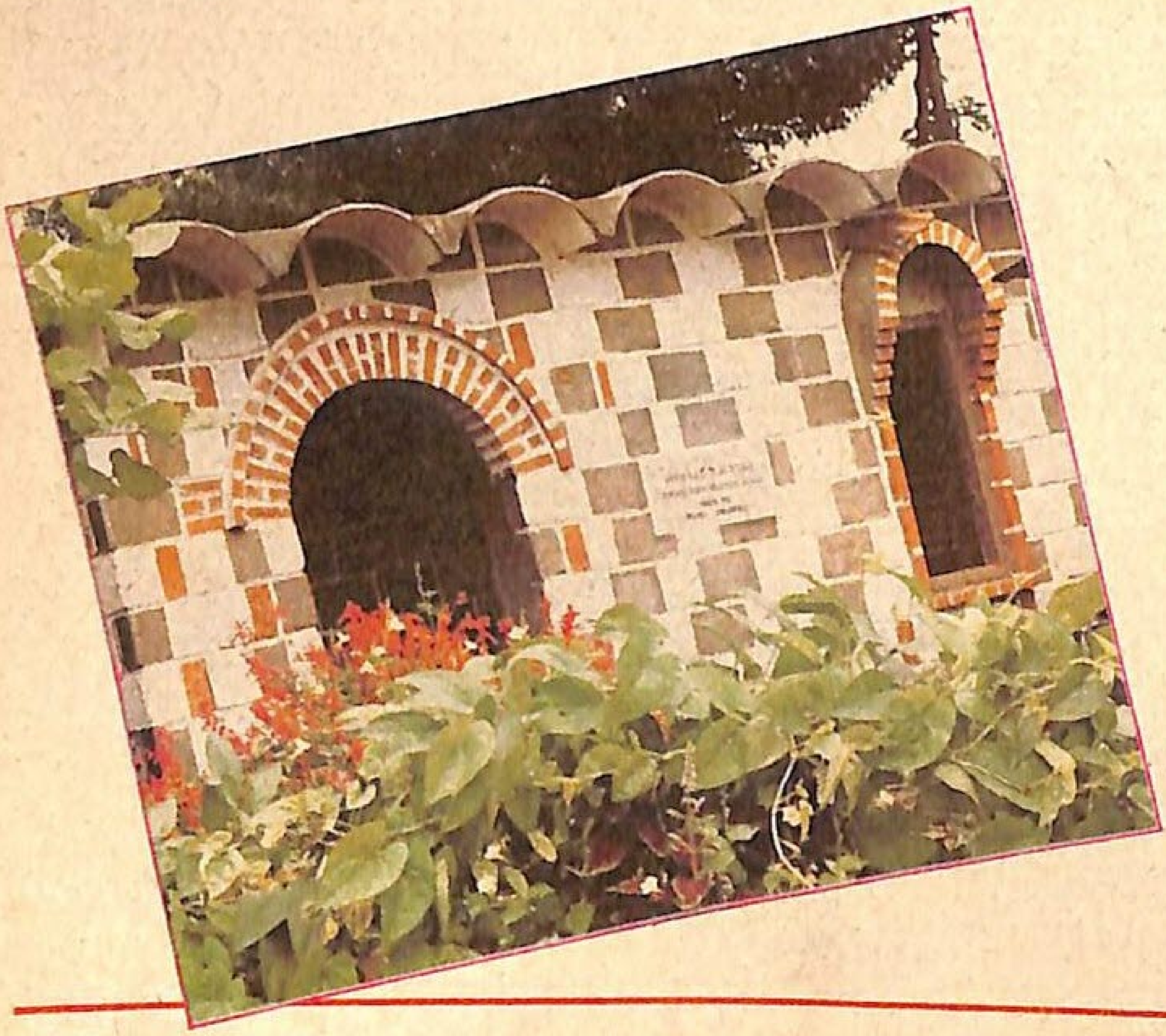


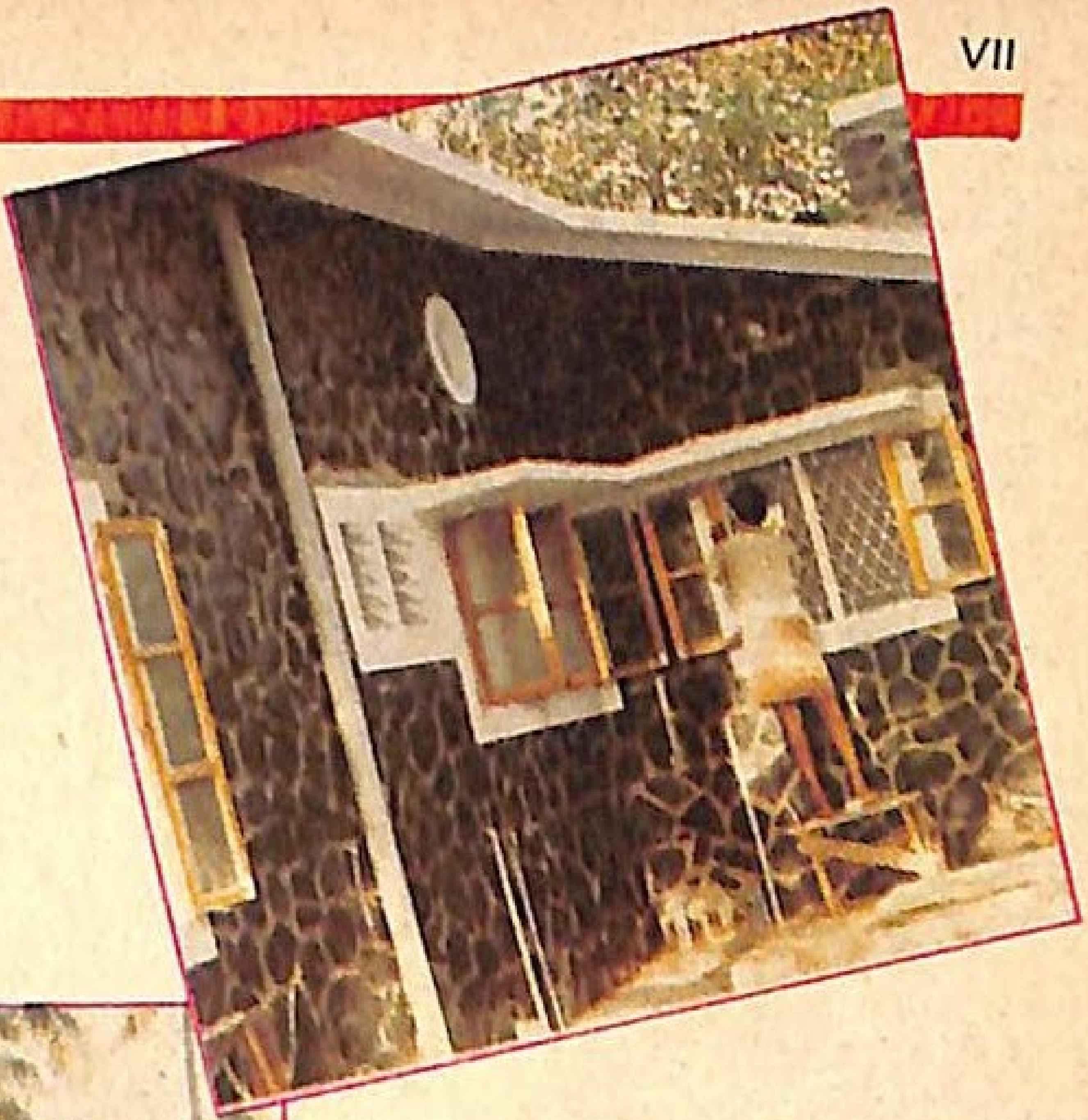
NIRMITI KENDRA, spearheading the revolution, has built a host of cost-effective public asset buildings in Kerala. Among them are a guest house, a tourist reception centre, an RDO quarters and a boat club.



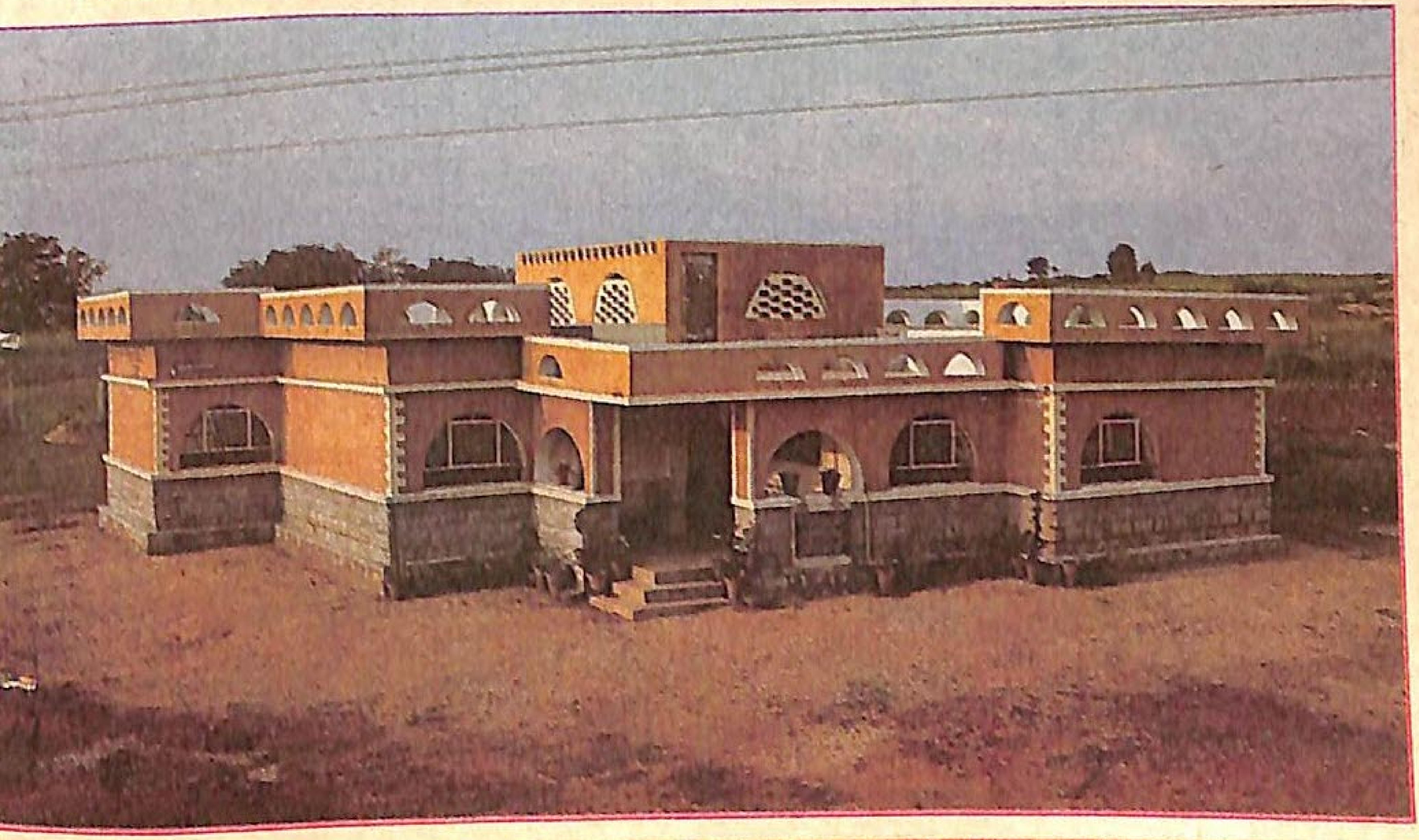


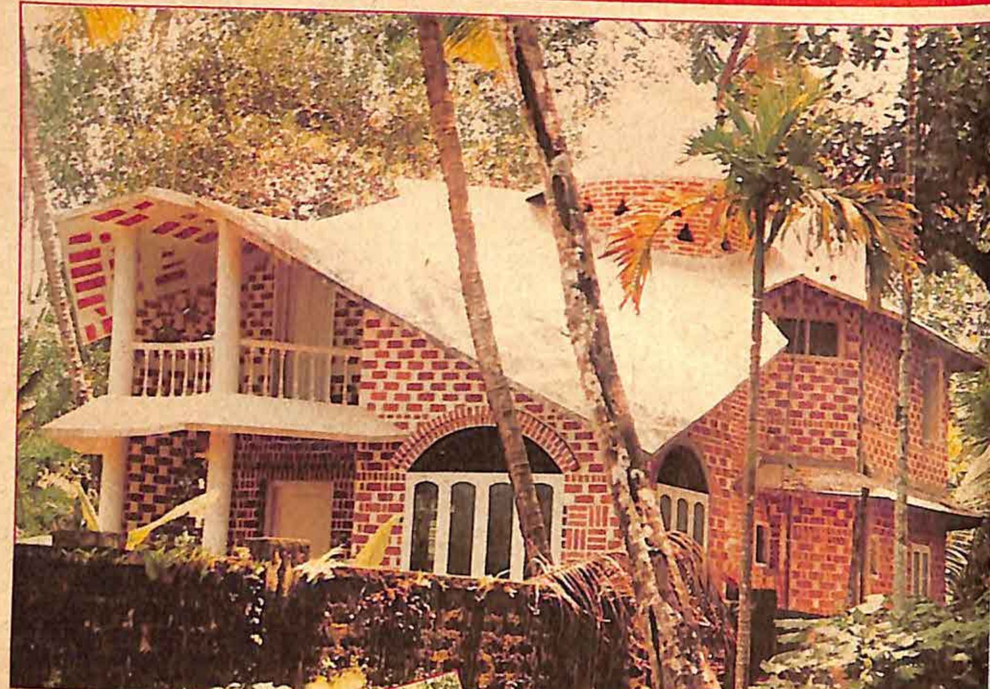


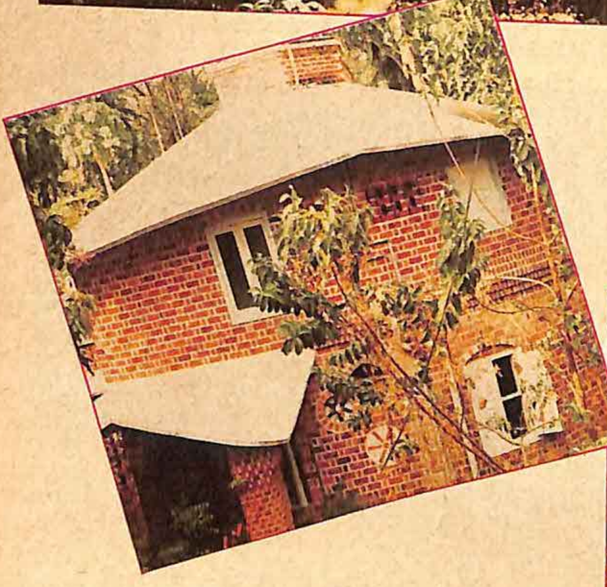




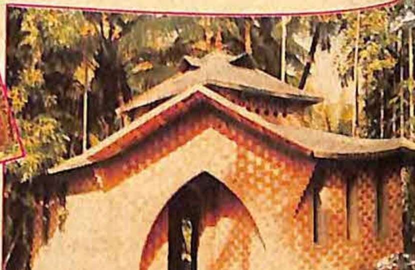
Mud blocks, sand bricks, granite chunks and seasoned laterite blocks are increasingly used to cut down cost. Experiments in Karnataka and Kerala rural setting.



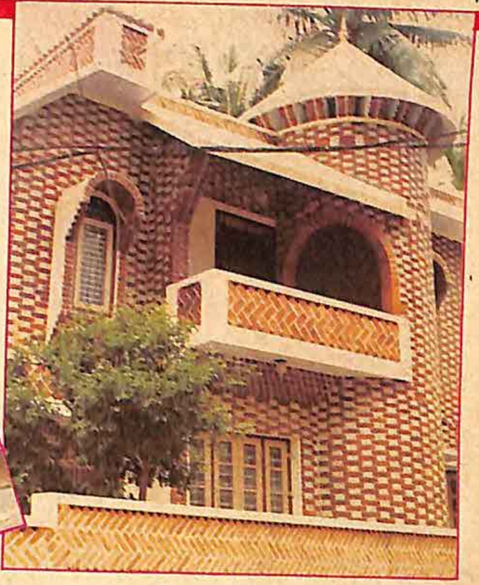




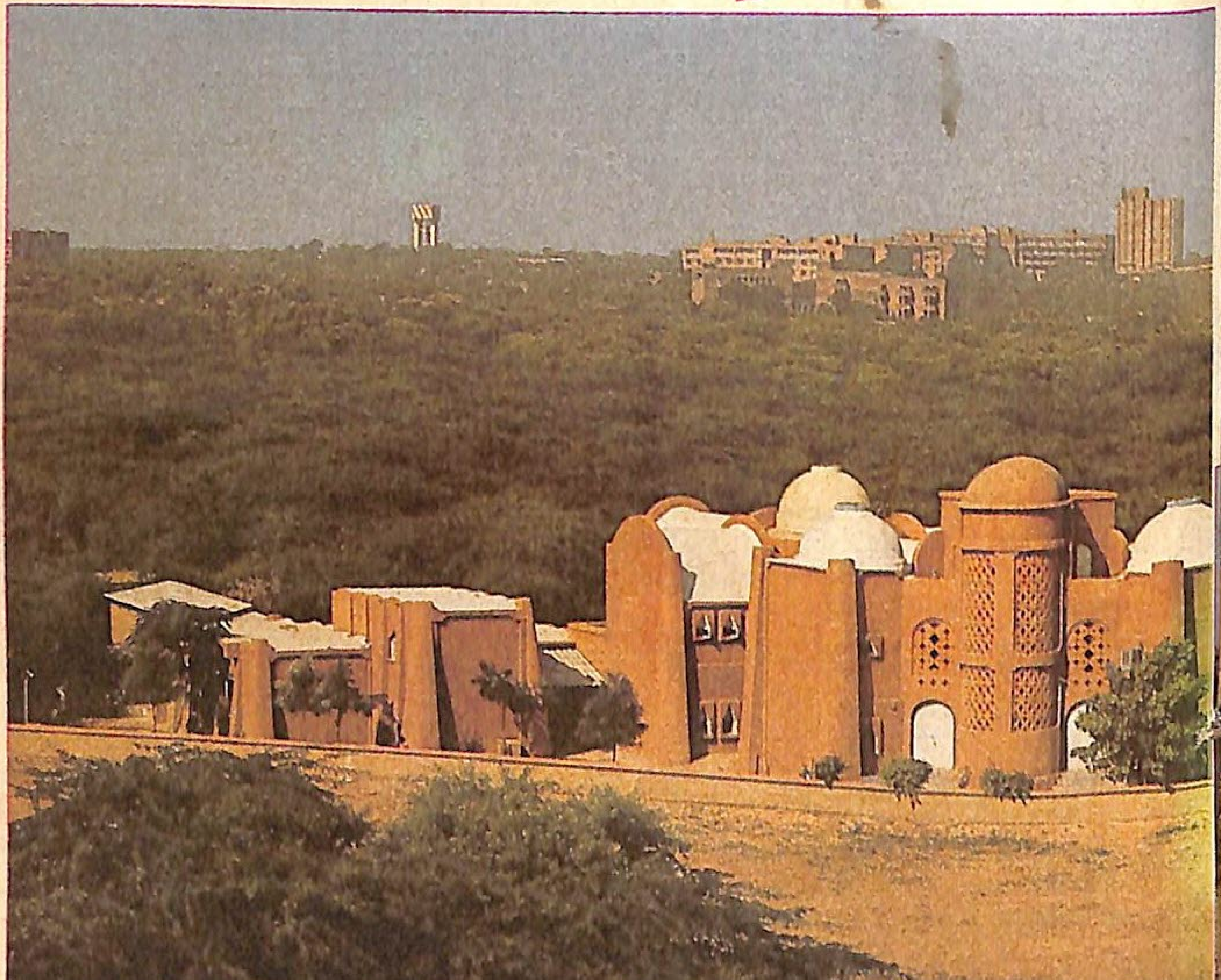
Offbeat designs at affordble cost.

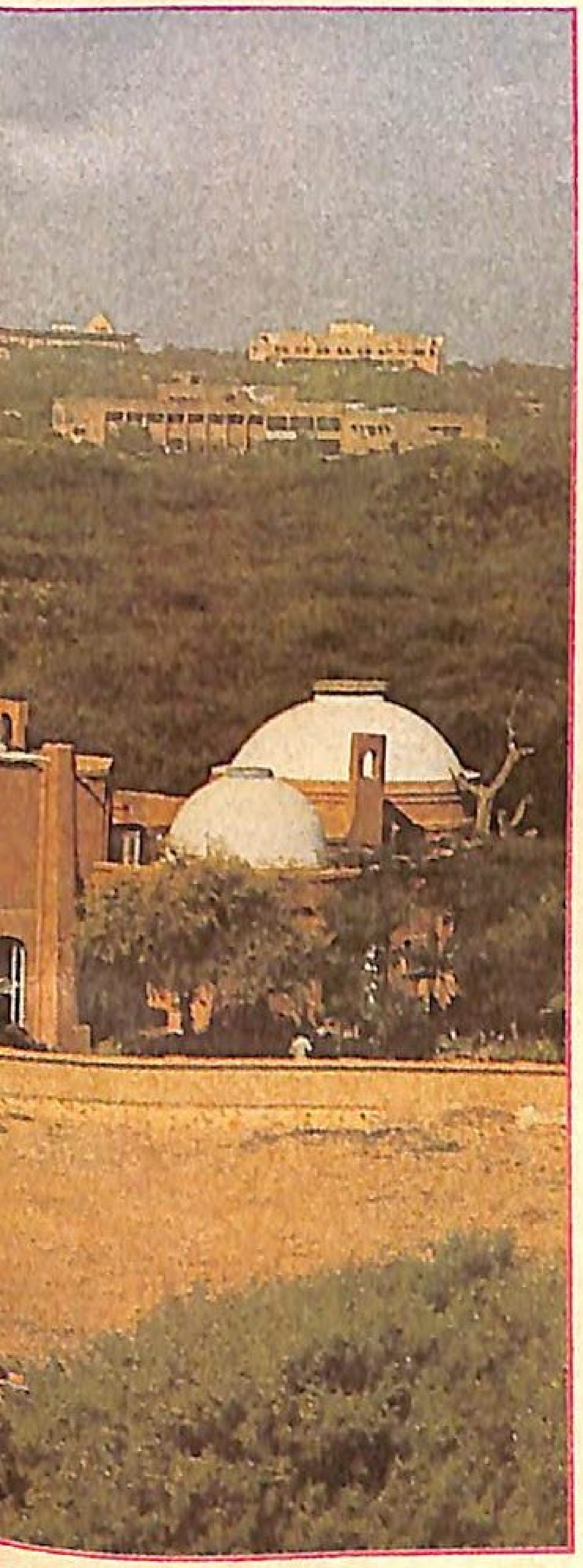


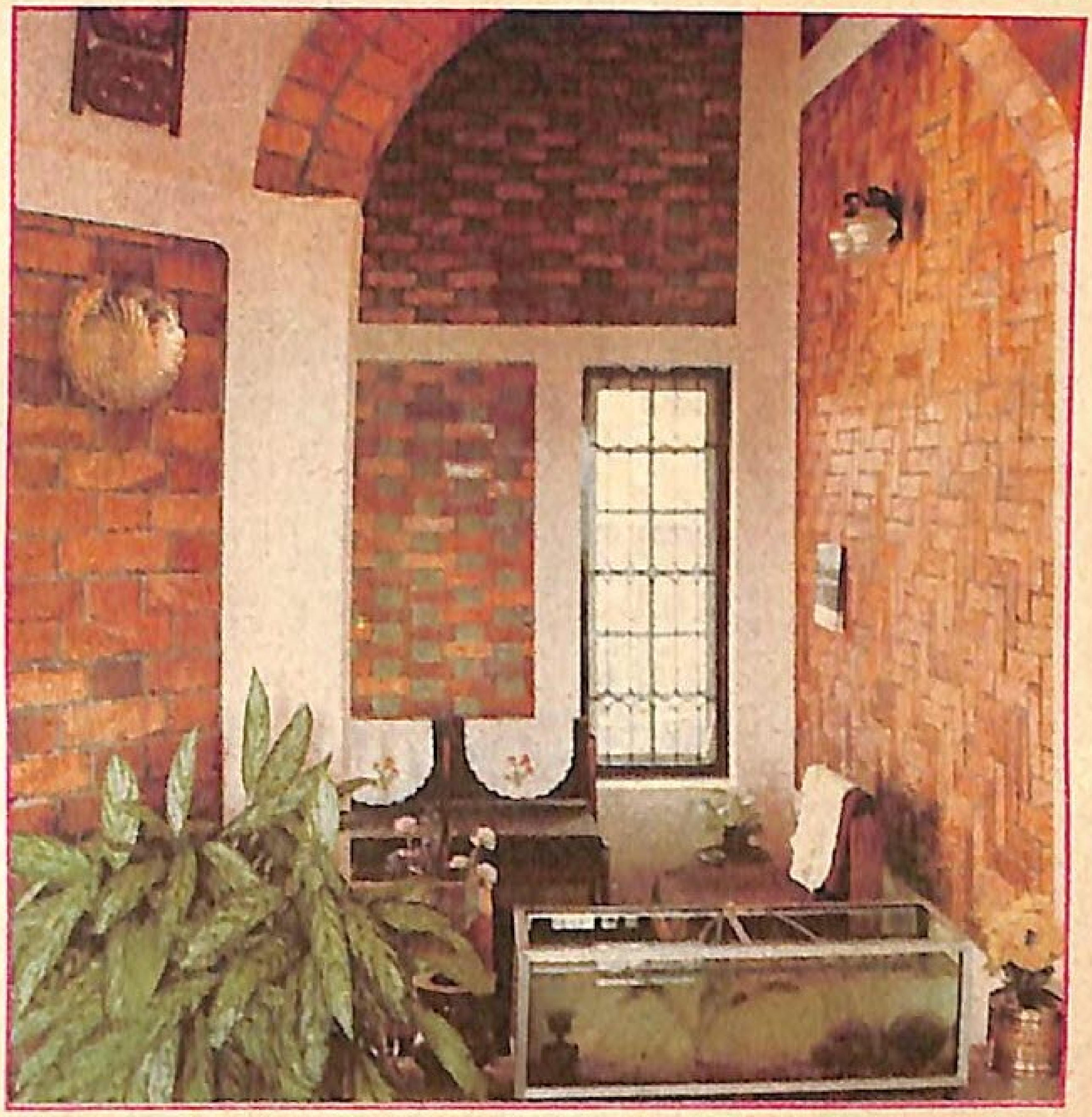
Integration of technologies without compromising quality.

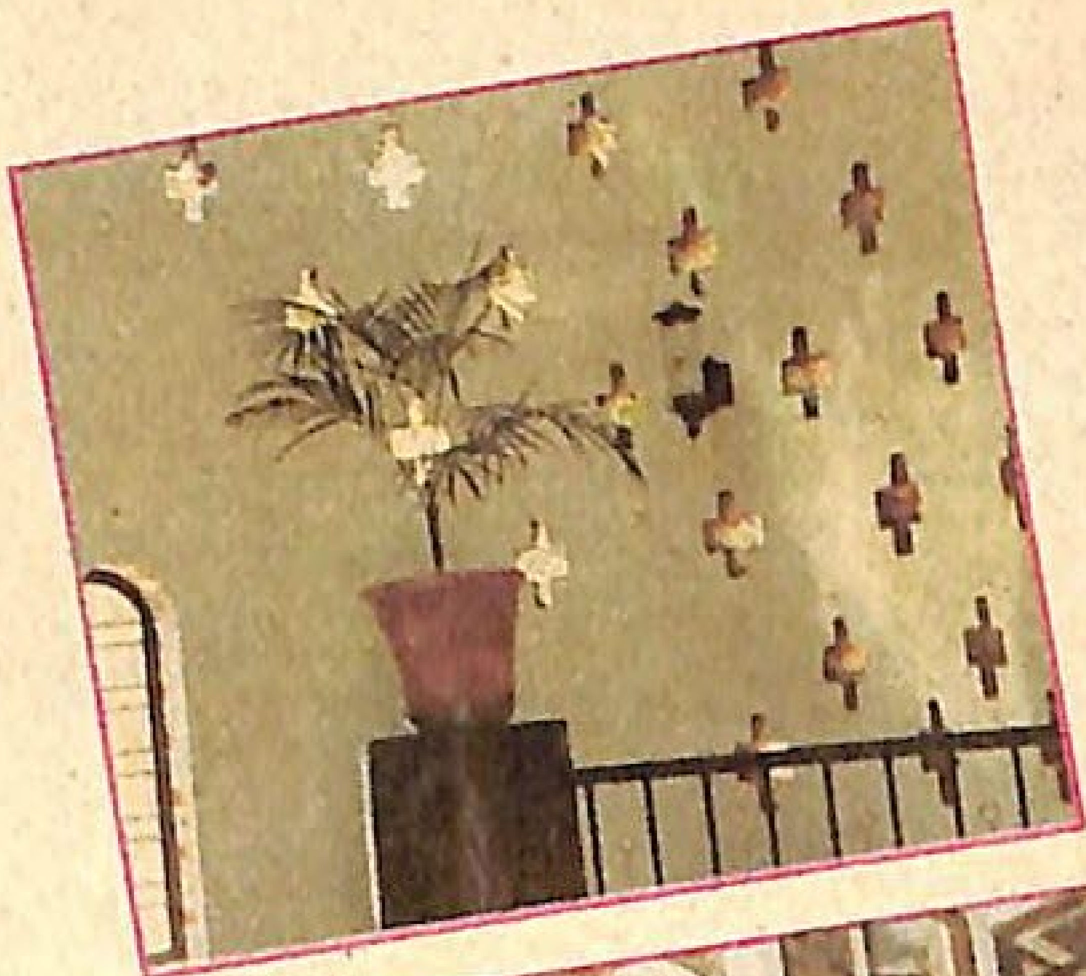


Delhi's alternate technology: building by compressed earth blocks and roofing by micro-concrete tiles.

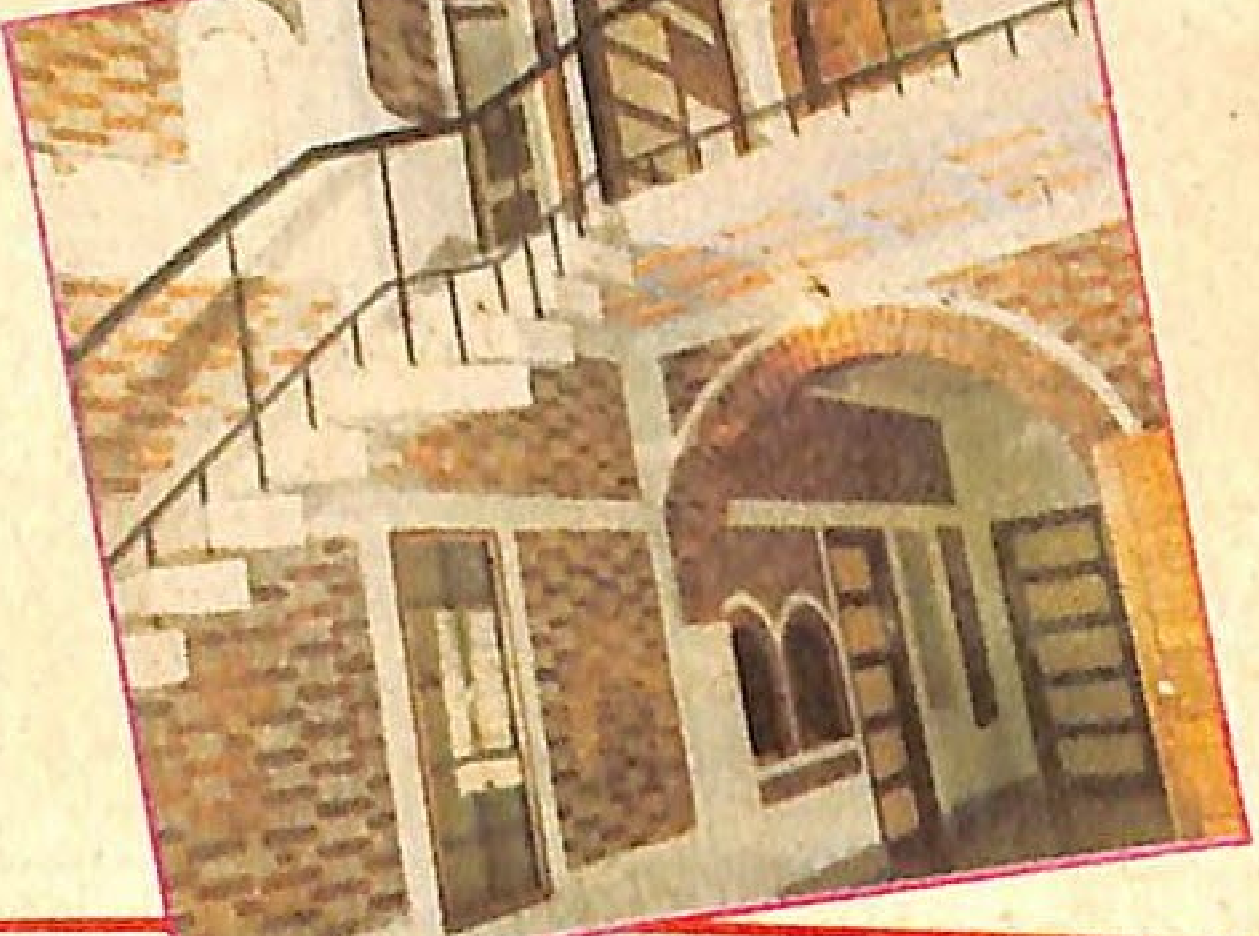




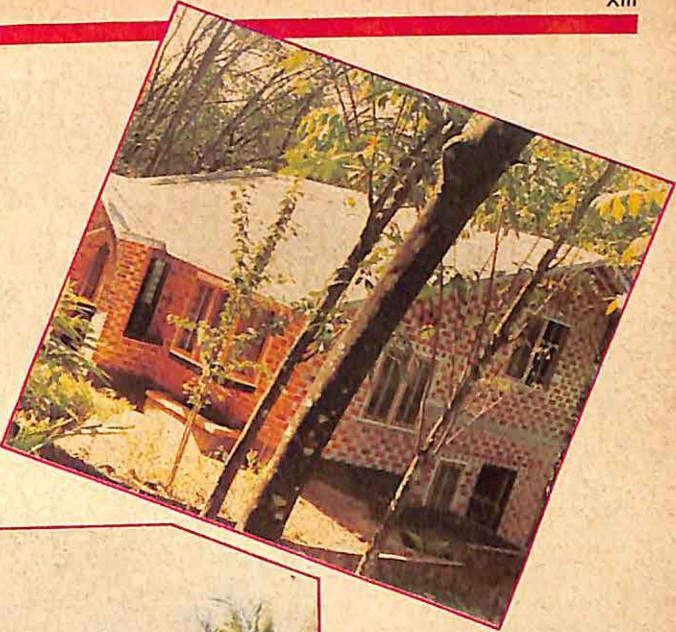


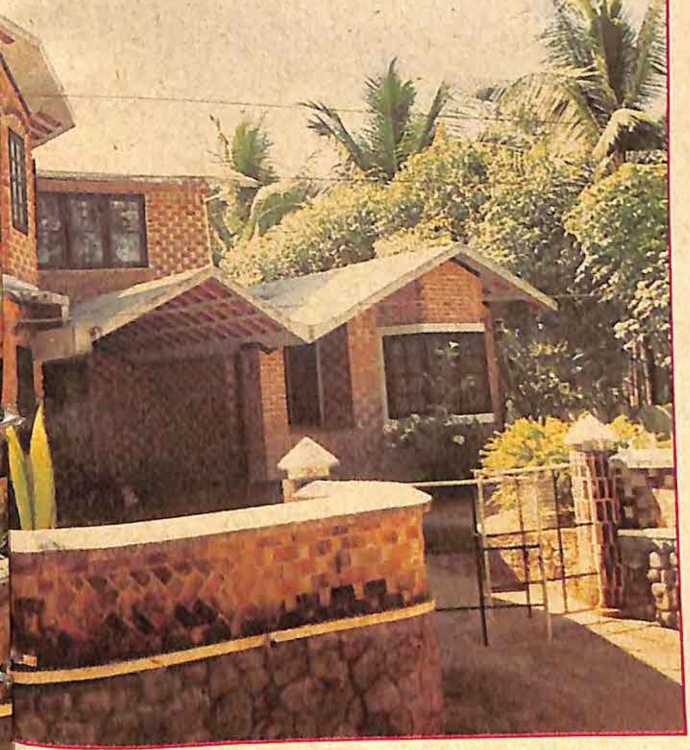


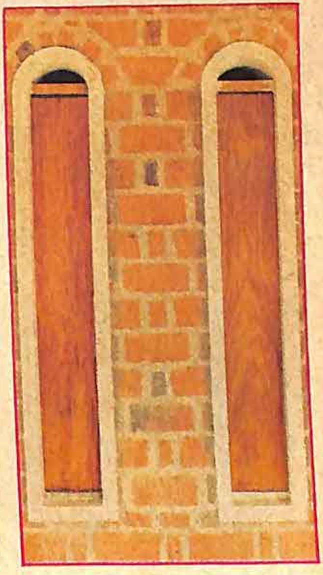
Cost reduction, but not at the cost of aesthetics. Some of the interiors without cement plastering.

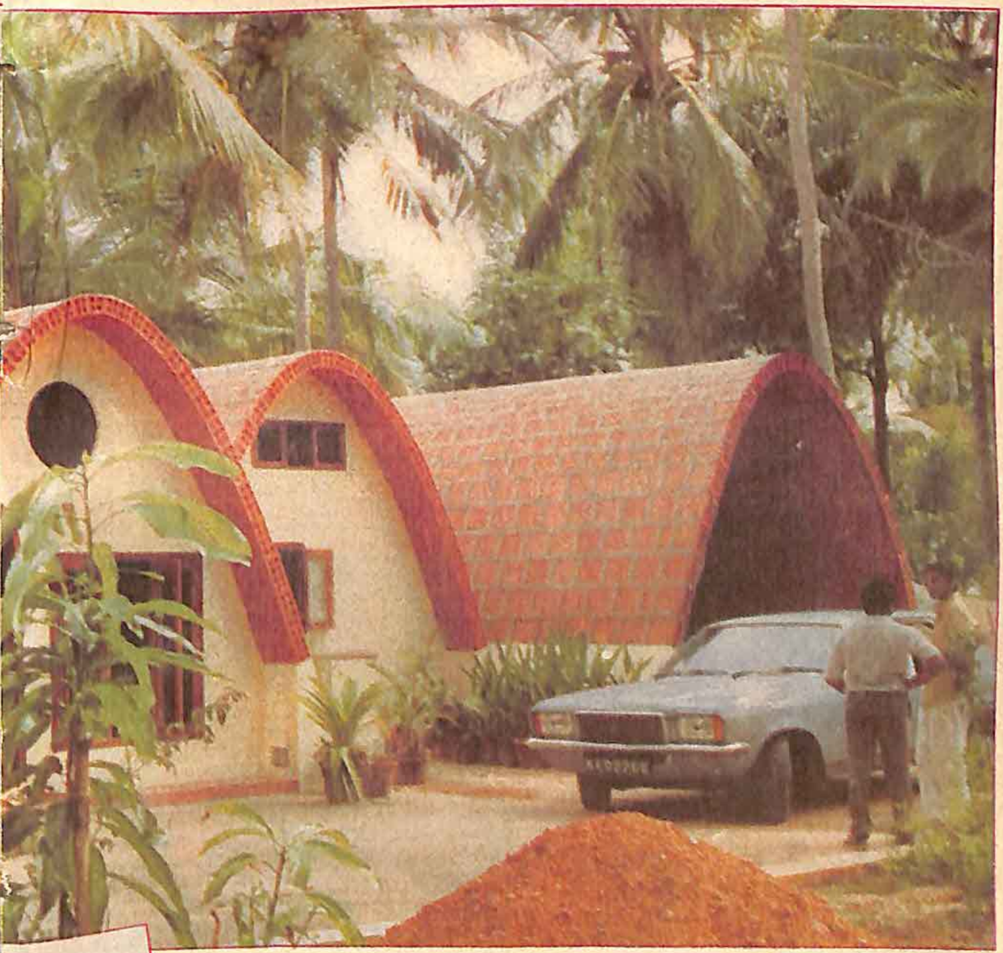


New wave designs integrated with nature have come to be accepted widely. At half cost. Lush greenery at no extra cost.

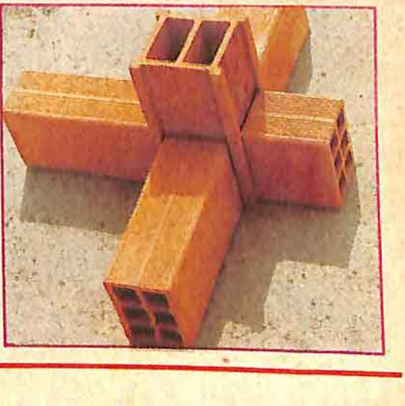


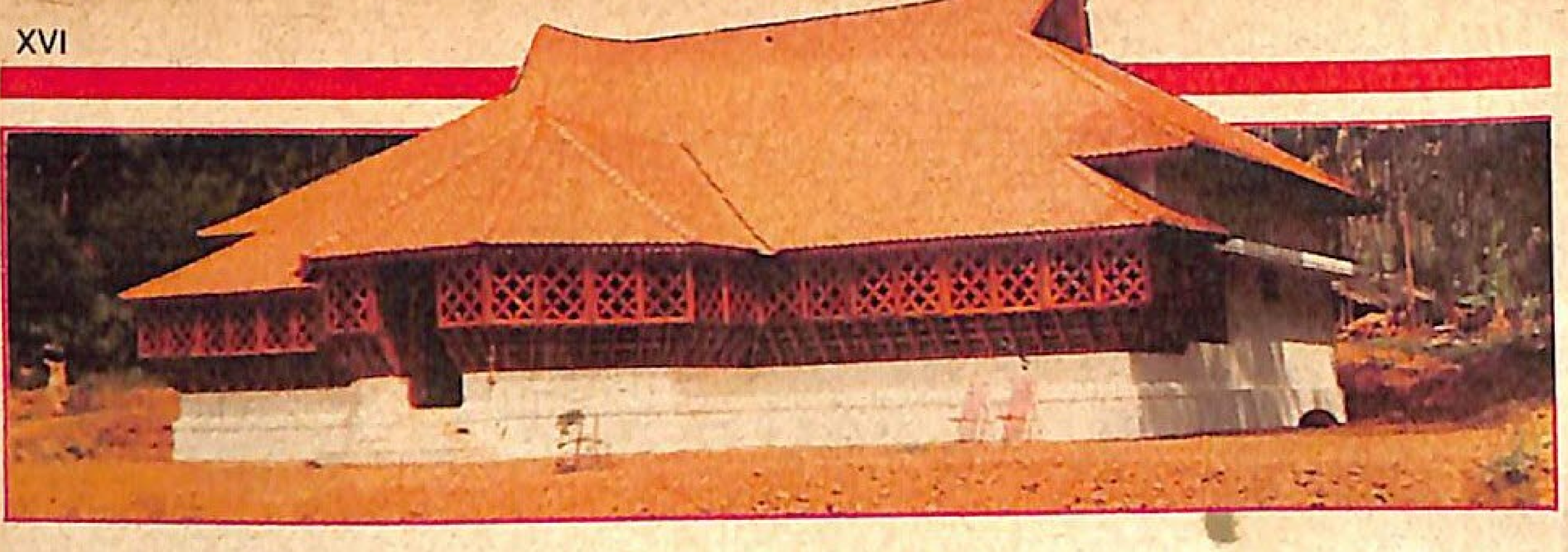


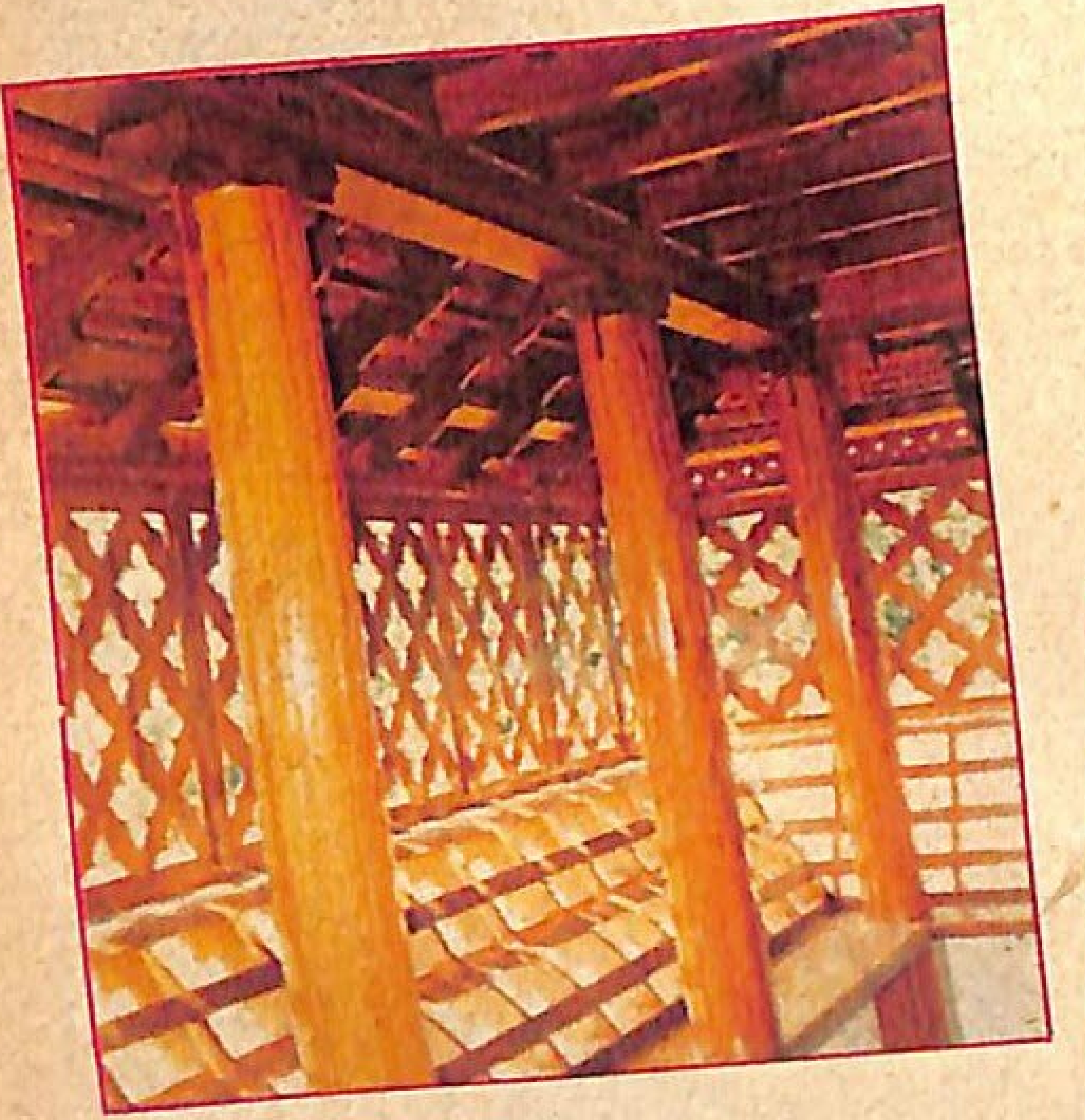




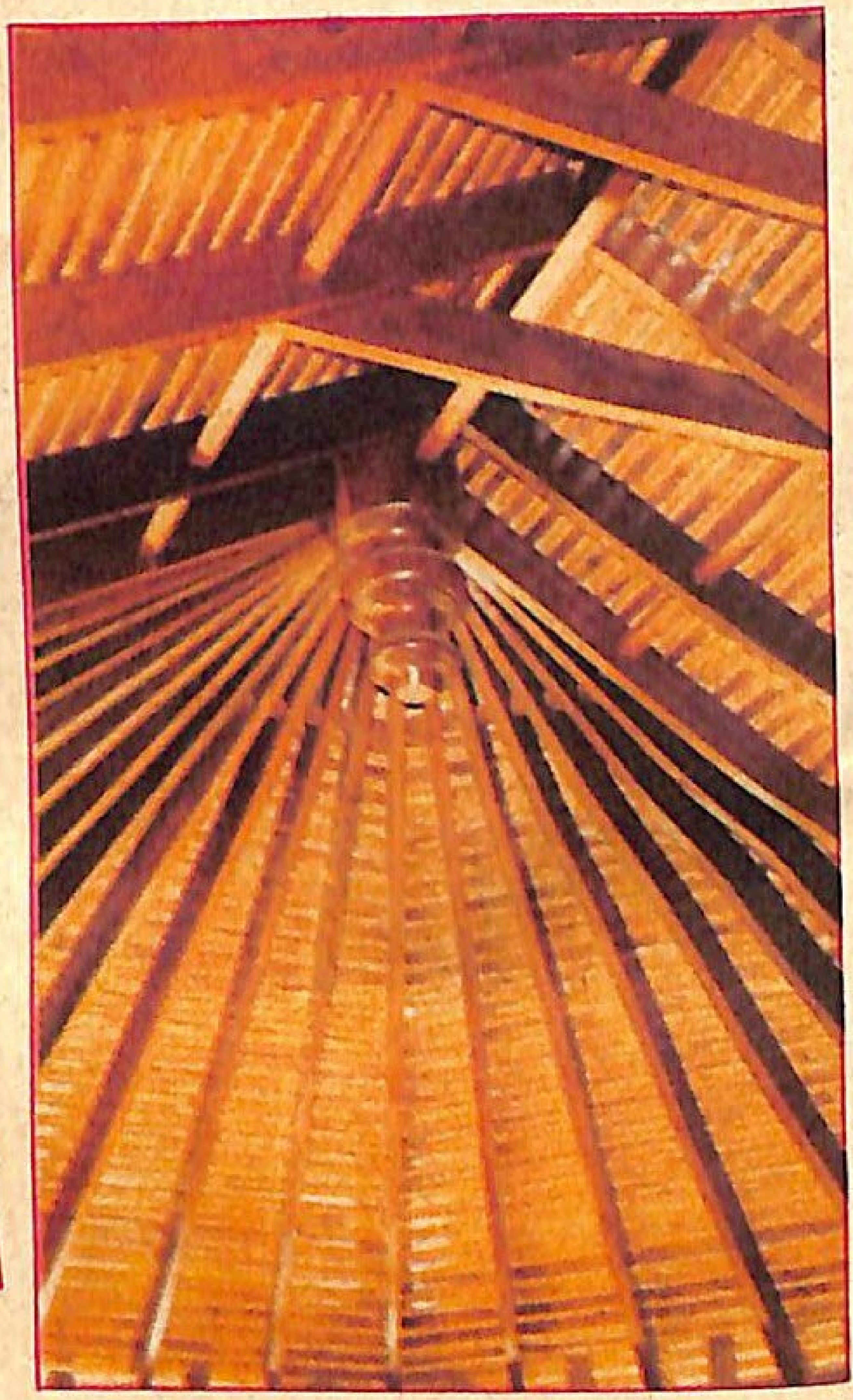
Houses with kiln burnt hollow clay bricks is a novel idea with an assured cost reduction upto 50 percent. The innovative design of the Beach House at Calicut (top) won many laurels.







Old is gold: a new tiled house with a lot of wood work at Thirunelli forests in the Wynad district of Kerala is a standing monument to the architectural splendour of yester years.



THE COUNTRY

India occupies a strategic position in Asia, looking across the seas to Arabia and Africa on the West and to Burma, Malaysia and the Indonesian Archipelago on the East. Geographically, the Himalayan ranges kept India apart from the rest of Asia.

The fertility of the Indo-Gangetic belt, however, had proved to be such an irresistible magnet that hordes of people pressed into India through the mountain passes from ancient times.

India lies to the north of the equator between 8° 4' and 37° 6' north latitude and 68° 7' and 97° 25' east longitude. It is bounded on the south west by the Arabian Sea and on the south east by the Bay of Bengal. On the north, north east and north west lie the Himalayan ranges. The southern tip, Kanyakumari is washed by the Indian Ocean.

India measures 3214 km from north to south and 2933 km from east to west with a total land area of 3,287,263 sq km. It has a land frontier of 15,200 km and a coastline of 7516.5 km. Andaman and Nicobar islands in the Bay of Bengal and Lakshadweep (islands) in the Arabian Sea are parts of the territory of India.

India shares its political borders with Pakistan on the west and Bangladesh and Burma on the east. The northern boundary is made up of the Sinkiang province of China. Tibet, Nepal and Bhutan.

India has seven major physiographic regions: (1) Northern Mountains including the Himalayas and the mountain ranges in the north-east. (2) The Indo-Gangetic plain, (3) Central Highlands, (4) Peninsular plateau, (5) East Coast, (6) West Coast, (7) Bordering seas and islands.

All the major land forms, hills, mountains, plateaus and plains, are well represented in India. Much of the land surface of India has developed a plateau character. There are extensive plains either flat or rolling at levels ranging from 300 to 900 metres, dotted with conical or rounded hills or traversed by flat-topped ridges. These are mostly in the central highlands and the peninsular plateau of the Deccan.

India has seven principal mountain

INDIA 1991

Capital	: New Delhi
Area	: 3 287 263 sq km
Population	: 84,39,30,861
Male	: 43,75,97,929
Female	: 40,63,32,932
Absolute Increase (1981-'91)	: 16,06,01,764
Decadal Growth (1981-1991)	: 23.50%
Density	: 267/sq km
Literacy	: 52.11%
,, Male	: 63.86%
,, Female	: 39.42%
Female-Male ratio	: 929 female for 1000 male

National income (1988-89)	: Rs. 306 822 crore (At current prices)
Per capita GNP (1988-89)	: Rs. 3835.00
Per capita GNP (current figure by World Bank)	: Rs. 6150.00
States	: 25

Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

Union Territories : 7

Andaman & Nicobar Islands, Chandigarh, Dadra Nagerhaveli, Delhi, Daman and Diu, Lakshadweep and Pondicherry.

ranges: (1) the Himalayas, (2) the Patkai and other ranges bordering India in the north and north east, (3) the Vindhyas, which separate the Indo-Gangetic plain from the Deccan Plateau, (4) the Satpura, (5) the Aravalli, (6) the Sahyadri, which covers the eastern fringe of the West Coast plains and (7) the Eastern Ghats, irregularly scattered on the East Coast of India and forming the boundary of the East Coast plains.

Himalayas, the highest mountain-system in the world, is also one of the world's youngest mountain ranges. It extends practically uninterrupted for a distance of some2500 km and covers an area of about 500,000 sq km. It contains the world's highest mountain peak, *Everest* and some ten peaks rising above 7,500 m. It appears to have risen as a result of a collision between the drifting Indian (peninsular) plate and the Tibetan plate of South Asia about 50 million years ago. The Himalayas reached their present heights much later.

Patkai and allied mountain ranges run along the Indo-Bangladesh-Burma border and may collectively be called *Purvachal* or eastern mountains. These ranges forming an arc must have come into existence along with the Himalayas.

Aravalli range in north-western India is one of the oldest mountain systems in the world. The present Aravalli range is only a remnant of the gigantic system that existed in prehistoric times with several of its summits, rising above the snow line and nourishing glaciers of stupendous magnitude which in turn fed many great rivers.

Vindhyan range traverses nearly the whole width of Peninsular India—a distance of about 1050 km with an average elevation of some 300 metres. The Vindhyan range appears to have been formed by the weathered products of the ancient Aravalli ranges.

Satpura range, another ancient mountain system, extends for a distance of 900 km with many of its peaks rising above 1000 metres. It is triangular in shape, with its apex at Ratnapuri and two sides running parallel to the Narmada and Tapti rivers.

Sahyadri, or Western Ghats, with an average height of 1200 metres, is about 1600 km long and runs along the western border of the Deccan Plateau, from the mouth of the river Tapti to Cape Comorin (Kanyakumari), the southernmost point of India. It overlooks the Arabian Sea, and catches the full force of the monsoon winds, thus precipitating heavy rains on the West Coast.

Eastern Ghats, bordering the East Coast of India, is cut up by the powerful rivers into discontinuous blocks of mountains. In its northern parts between the Godavari and Mahanadi rivers it rises to above 1000 metres.

There are three main watersheds in India. (1) Himalayan range with its Karakoram branch in the north, (2) Vindhyan and Satpura ranges in Central India and (3) Sahyadri or Western Ghats on the West Coast. All the major rivers of India originate in one or the other of these watersheds.

The main rivers of the Himalayan group are *the Indus, the Ganga* and *the Brahmaputra*. These rivers are both snow-fed and rain-fed and have therefore continuous flow throughout the year. Himalayan rivers discharge about 70 per cent of their inflow into the sea. This includes about 5 per cent from central Indian rivers. They join the Ganga and drain into the Bay of Bengal.

The *Indus*, which the Aryans called the Sindhu, has lent its name to India. Its valleys on both sides have been the seat of a civilization, that was not only older but also superior in many respects to the fabled civilizations of Sumeria and Egypt. This historic river has five major tributaries—the Jhelum, the Chenab, the Ravi, the Beas and the Sutlej. These in turn have inspired the name Punjab (punj = five & ab = river), the Land of Five Rivers. The Indus rises from Mount Kailas in Tibet and traverses many miles through the Himalayas before it is joined by its tributaries in the Punjab. Thereafter it passes into Sind (Pakistan) to fall into the Arabian Sea.

The Ganga, famous alike in legend and history, is considered the most sacred river by the Hindus. It covers, what is called the heartland of India, which was the main centre of the ancient Aryan culture. It rises near the glacier, Gangotri in the Himalayas and flows through Uttar Pradesh, Bihar and Bengal to fall into the Bay of Bengal. Ganga and its tributaries Jamuna, Gomti, Garga, Sarda, Gandak, Chambal, Son and Kosi, spread out like a fan in the plain of India thus forming the largest river basin in India, with an area, one

India's National Insignia

*The **State Emblem** of India is an adaptation from the Sarnath Lion Capital of Asoka as preserved in the Sarnath Museum. The Government adopted the emblem on 26th January, 1950, the day when India became a Republic.*

In the original of Sarnath Capital, there are four lions, standing back to back, mounted on an abacus with a frieze carrying sculpture in high relief of an elephant, a galloping horse, a bull and a lion separated by intervening wheels (chakras) *over a bell-shaped lotus. Carved out of a single block of polished sandstone, the Capital is crowned by the Wheel of the Law (Dharma Chakra).*

In the State Emblem adopted by the Government only three lions are visible, the fourth being hidden from view. The wheel appears in relief in the centre of the abacus with a bull on the right and a horse on the left and the outlines of the other wheels on the extreme right and left. The bell-shaped lotus has been omitted. The words, Satyameva Jayate from the Mundaka Upanishad meaning 'Truth alone triumphs', are inscribed below the abacus in Devanagari script.

*The **National Flag** is a horizontal tri-colour of deep saffron (Kesari) at the top, white in the middle and dark green at the bottom in equal proportion. The ratio of the width of the flag to its length is two to three. In the centre of white band is a wheel, in navy blue, which represents the Charkha.@ Its design is that of the wheel (Chakra) which appears on the abacus of the Sarnath Lion Capital of Asoka. Its diameter approximates the width of the white band. It has 24 spokes.*

The design of the National Flag was adopted by the Constituent Assembly of India on 22nd July, 1947. Its use and display are regulated by a code.

*Rabindranath Tagore's song Jana-gana-mana was adopted by the Constituent Assembly as the **National Anthem** of India on 24th Jan. 1950. The first stanza (out of 5 stanzas) of the song forms the National Anthem. It reads:*

Jana-gana-mana-adhinayaka jaya he
Bharata-bhagya-vidhata
Punjaba-Sindhu-Gujarata-Maratha-
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchhala-Jaladhi-taranga
Tava Subha name jage, Tava subha asisa mage,
Gahe tava jaya-gatha.
Jana-gana-mangala-dayaka, jaya he
Bharata-bhagya-vidhata
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he.

The following is Tagore's English rendering of the stanza:

Thou art the ruler of the minds of all people,
Dispenser of India's destiny.
Thy name rouses the hearts of the Punjab,
Sind, Gujarat and Maratha,
Of the Dravid and Orissa and Bengal.
It echoes in the hills of the Vindhyas and Himalayas, mingles in the music of the Jamuna and the Ganges and is chanted by the waves of the Indian Sea.
They pray for the blessings and sing thy praise.
The saving of all people waits in thy hand,
Thou dispenser of India's destiny,
Victory, victory, victory to thee.

At the time of independence, the Govt. of India followed the Gregorian calendar based on the Christian era.

*The National Government adopted the recommendation of the Calendar Reform Committee that the Saka era be adopted as the basis of the **National Calendar.** The Saka year has the normal 365 days and begins with Chaitra as its first month. The days of the Saka calendar have a permanent correspondence with the dates of the Gregorian Calendar, Chaitra 1 falling on March 22 in a normal year and on March 21 in a Leap Year. The National Calendar commenced on Chaitra 1 Saka, 1879 corresponding to March 22, 1957 A.D.*

The months of the National Calendar, with their days and the dates of the Gregorian Calendar corresponding to the first day of the Saka month are given below:

Saka & Gregorian Calendars†

1 Chaitra 30/31 days††	March 22/21††
1 Vaishaka 31	April 21
1 Jyaistha 31	May 22
1 Asadha 31	June 22
1 Sravana 31	July 23
1 Bhadra 31	Aug. 23
1 Asvina 30	Sept. 23
1 Kartika 30	Oct. 23
1 Agrahayana 30	Nov. 22
1 Pausa 30	Dec. 22
1 Magha 30	Jan. 21
1 Phalguna 30	Feb. 20

***National Animal:** Tiger; **National Flower:** Lotus; **National Bird:** Peacock.*

@ Khadi Spinning Wheel

quarter of the total area of India.

The Brahmaputra, rising in Western Tibet, flows for some 1300 km through the Himalayas, then turns south-west and then south, joining the easternmost branch of the Ganga—the Padma—and empties together with Ganga into the Bay of Bengal.

The rivers of Deccan denuding their beds for long geological ages have developed flat valleys with low gradients. The major Deccan rivers are the *Godavari*, the *Krishna*, the *Cauvery*, the *Pennar*, the *Mahanadi*, the *Damodar*, the *Sharavati*, the *Netravati*, the *Bharatapuzha*, the *Periyar*, the *Pamba*, the *Narmada* and the *Tapti*. These rivers are entirely rain-fed with the result that many of them shrink into rivulets during the hot season. The Deccan rivers contribute about 30 per cent of the total outflow in India. Of this, the rivers that flow from west to east account for 20 per cent and those from east to west about 10 per cent.

The *Godavari*, the *Krishna*, the *Cauvery* and the *Pennar* all rise in the Western Ghats and traverse the plateau and the East Coast, to fall into the Bay of Bengal. The Godavari has the second largest river basin in India, comprising about 10 per cent of the total delta area of India. The Krishna basin is the second largest in the Peninsula, and the third largest in the whole of India.

The *Mahanadi* and the *Damodar* rise in the north west of the plateau and flow east into the Bay of Bengal. The Mahanadi forms the third biggest basin in the peninsula and fourth in all India.

The *Narmada* and the *Tapti* rising in the northernmost extremity of the plateau fall into the Gulf of Cambay in the Arabian Sea. The Narmada has a fairly extensive basin, next only to those of the *Krishna* and the *Mahanadi*. Rivers the *Sharavati*, the *Netravati*, the *Bharatapuzha*, the *Periyar* and the *Pamba* rise in the Western Ghats and cross the West Coast to fall into the Arabian Sea. These rivers are comparatively small with limited catchment areas and minor basins.

THE PEOPLE

The people of India are largely the descendants of immigrants from across the Himalayas. It is still debated whether any native race evolved on Indian soil.

We know that the species known as *Ramapithecus* was found in the Siwalik foothills of the north-western Himalayas. This species believed to be the first in the line of *hominids* (human family) lived some 14 million years ago. Recent researches have shown that a species resembling the *Australopithecus* lived in India some 2 million years ago. Even this discovery leaves an evolutionary gap of as much as 12 million years since Ramapithecus.

Very little research has been done regarding the ethnic origins of the Indian population. Perhaps it is of little import now. The fact is that the Indian population is polygenetic and is a confusing mixture of various racial strains. Few, if any, can claim to belong to any particular stock. Nevertheless, many Indians pride themselves on their Aryan descent.

The observations of Natwar Singh, minister-historian, are relevant in this context. Says Singh, "The unpalatable truth is, that for a vast number of people in north India, immaculate ancestry is a mirage. He is a brave man, who can with certitude prove his Aryan or Scythian descent. He, that has traced his birth to a mythological ancestor, has done so, to draw attention away from the intervening generations".*

We are giving below descriptions of the various races in India according to the classical pattern.

According to Dr. B. S. Guha, the population of India is derived from 6 main ethnic groups: 1. Negrito, 2. Proto-Australoids or Austrics, 3. Mongoloids, 4. Mediterranean or Dravidian, 5. Western Brachycephals and 6. Nordic Aryans.

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* K. Natwar Singh: *Maharaj Suraj Mahal* (1707-1763)

Brachycephalic (broad headed) Negroids from Africa were the oldest people to have come to India. These people are now found only in patches among the hill tribes of south India (*Irulas, Kodars, Paniyans and Kurumbas*) on the mainland. But they survive in the Andaman Islands, where they have retained their language.† They are an inconsequential element in the population of India.

Proto-Australoids or Austrics were a race of people, with wavy hair plentifully distributed over their brown bodies, long heads with low foreheads and prominent eyeridges, noses with low and broad roots, thick jaws, large palates and teeth and small chins.

The Austrics of India represent a race of medium height, dark (and in some cases black) complexion with long heads and rather flat noses but otherwise of regular features. Miscegenation with the earlier Negroids may be the reason for the dark or black pigmentation of the skin and flat noses. Austric tribes spread over the whole of India and then pass on to Burma, Malaya and the islands of South East Asia. "The Austrics form the bedrock of the people".††

The Austrics laid the foundation of Indian civilization. They cultivated rice and vegetables and made sugar from sugarcane. Their language has survived in the Kol or Munda speech, current in Eastern and Central India.

¥Dravidians comprise all the three subtypes, Paleo-Mediterranean, the true Mediterranean and Oriental Mediterranean. They appear to be people of the same stock as the peoples of Asia Minor and Crete and the pre-Hellenic Aegeans of Greece. They are reputed to have built up the city civilization of the Indus Valley, whose remains have been found at Mohenjo-daro and Harappa and other Indus cities. The Dravidians must have spread to the whole of India, supplanting Austrics and Negritos alike.

Mongoloids of various types are confined to the north-eastern fringes of India, in Assam, Nagaland, Mizo, Garo and Jainti Hills. Generally, they are people of yellow complexion, oblique eyes, high cheekbones, sparse hair and medium height.

Nordic Aryans who migrated to India were a branch of Indo-Iranians, who had originally left their homes in Central Asia, some 5000 years ago, and had settled in Mesopotamia for some centuries. The Aryans must have come into India between 2000 and 1500 B.C. Their first home in India was western and northern Punjab, from where they spread to the Valley of the Ganga and beyond. The Aryans, coming into India, encountered the highly civilized Indus Valley people who had big towns, with fortifications and brick structures and many of the amenities of a quite high city civilization. The Indus people were essentially a city people while the Aryans were a pastoral race.

Though it is not exactly known what happened to the Indus people or their civilization, it may be assumed that they intermingled with the incoming Aryans, who adopted the Indus culture as their own.

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† See Andaman & Nicobar Island, infra.

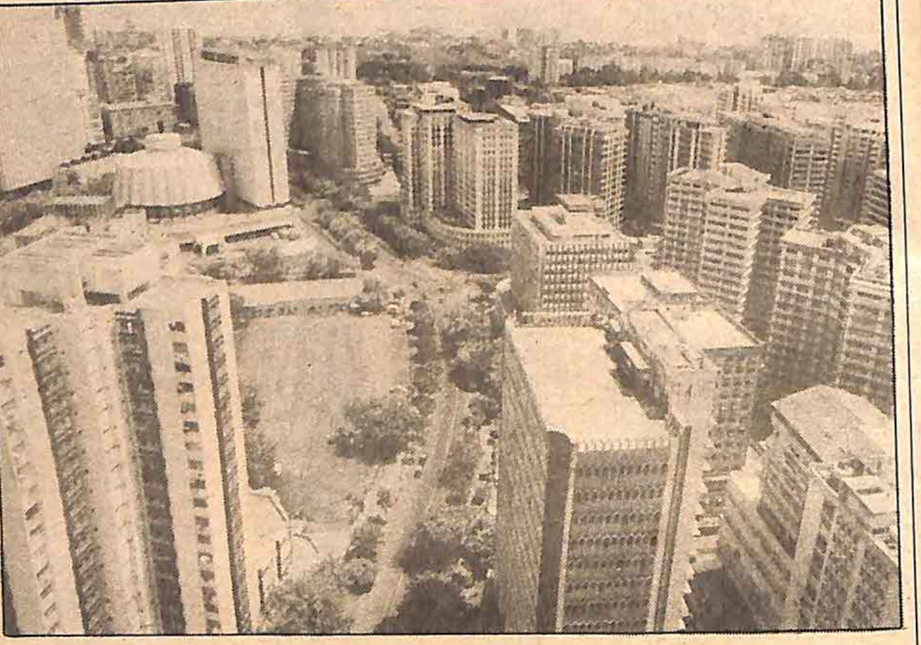
†† Gazetteer of India.

¥ The term *Dravidian* is derived from the pre-Hellenic Lycians of Asia Minor who called themselves *Trmmili*, which the Greeks wrote as *Temilai*. *Temilai* became *Dramiza*. *Dramiza* evolved itself in two ways: (1) In the South among the Dravidians, the process was *dramizadamiza–Tamiz* (modern Tamil), (2) In the north, among the Aryans, *dramiza–dramila–dravida* (Dravidian).

THE POPULATION

According to 1991 census, India has a population of 84,39,30,861 (Males 43,75,97,929; females 40,63,32,932). The final figures of the census are still under compilation and the figures now available are provisional. The growth rate during 1981-'91 was about 23.50%.

The population as per 1981 census was 68,51,84,692. The population in Assam was taken in 1981 estimates. This was reviewed in the light of 1991 census figures. The population figures arrived at in 1991 were lower than those arrived at in 1981. As a result, the population of India in 1981 has now been



Bombay–India's Largest City

Bombay has emerged as the largest city in India with a population of 12.57 million. According to the 1991 census, Calcutta emerges as the second largest with 10.86 million. Out of India's total of 843.9 million people, 231.60 million live in urban areas. Total population in the Metropolitan cities comes to 68.56 million.

The following are the largest 20 cities in India in the descending order:

		million			million
1.	Bombay	12.57	11.	Nagpur	1.65
2.	Calcutta	10.86	12.	Surat	1.52
3.	Delhi	8.38	13.	Jaipur	1.51
4.	Madras	5.36	14.	Indore	1.17
5.	Hyderabad	4.27	15.	Coimbatore	1.14
6.	Bangalore	4.11	16.	Vadodara	1.12
7.	Ahmedabad	3.28	17.	Patna	1.10
8.	Pune	2.44	18.	Madurai	1.09
9.	Kanpur	2.10	19.	Bhopal	1.06
10.	Lucknow	1.67	20.	Varanasi	1.02

RELIGIOUS COMMUNITIES

The major religious communities of India are the Hindus, Muslims, Christians, Sikhs, Buddhists, Jains and Parsis. Of these the last two are numerically insignificant but they are important in other ways.

Of the 665,287,849 people in India in 1981* (Assam not included), the Hindus accounted for the largest community with 549,779,481 members. Other communities were divided as follows:

Muslims: 75,512,439, Christians: 16,165,447, Sikhs: 13,078,146, Buddhists: 4,719,796, Jains: 3,206,038, Other Religions: 2,766,285, Religions not stated: 60,217.

The Scheduled Castes and Scheduled Tribes who are part of the Hindu community form over 23.51% of the total population, about 156 million.

The data of the 1981 census offers some other statistics also of interest to religious sociologists. The Appendix of the Household Population gives 183 subdivisions that are grouped together in the general statistics as "other religions and persuasions."

Of these, 71,630 are Zoroastrians and 5618, Jews.

There are 25,416 "Adivasis" by religion and there are 1,367 "tribals" (in Nagaland), 119 "animists", and 25,985 whose religion is simply "Non-Christian" (in Manipur, Meghalaya and Nagaland), together with 796 "pagans" in the same three States, and 1,215 "Meathans" in Manipur.

Some other tribals have given their specific tribal identity as their religions: as for example, the census has the record of 484 Oraons, 32,252 Santals, 1,481 Garos, 6,975 Gonds, 4,133 Hos, 148,437 Khasis, 1,160 Mundas, 1,296 Nagas.

Nirankaris, numbering 3382, of apparently Hindu following, have entered themselves under geographical or caste terms like Agarwal, Bengali, Gujarati, Maharashtrian, Marathi, Marwari, Malayalee, Tamilian and Teluguite.

Perhaps of more interest is that a total of 29,086 persons corresponding to 5,117 households consider themselves as "atheists" (predominantly in rural areas of Tamil Nadu, Maharashtra, Madhya Pradesh, Manipur and Bihar). There are 816 humanists ("manab dharma"), half of them in Maharashtra.

Census of 1981 gives some other interesting data too.

"The total fertility rate in India (excluding Assam) is 3.9 in rural areas, 2.8 in urban areas, and 3.6 for total area.

"It may be noted that fertility is higher among Muslims, followed by Buddhists, Hindus, Sikhs, Jains and Christians.

"At the national level, the total fertility rate for both Jains and Christians is identical, being 2.6

Religious Members

Religions	Membership	Percentage
Hindus	549,779,481	82.64
Muslims	75,512,439	11.35
Christians	16,165,447	2.43
Sikhs	13,078,146	1.96
Buddhists	4,719,796	0.71
Jains	3,206,038	0.48
Other Religions	2,766,285	0.42
Religion not stated	60,217	0.01

"This apparent contradiction in the total fertility rate for all areas is due to the rural-urban distribution differentials in these groups."

The total fertility rate for Sikhs is 3.4, for Hindus and Budhists 3.6 and for Muslims 4.1.

The Christian female ratio compared to the males is by far the highest among the various communities. They have for every 1,000 males, 992 females; while Buddhists have 953, Jains 941, Muslims 937, Hindus 933 and Sikhs 880.

But on the other hand, according to census report, Christian women tend to marry rather late and therefore the percentage of married women in the fertile age group (between 15 and 49) is only 62.15, while for the Sikhs it is 70.40, for Jains 72.09, for Buddhists 79.26, for Muslims 80.42 and for Hindus 82.35.

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*1991 Census data on religious communities is not yet available.

was originally spoken in Delhi and some western UP districts. From the literary point of view, the term Hindi covers not only the Khariboli form, but also a number of other dialects like Brajbhasha, Bundeli, Awadhi, early Marwari of Rajasthan and the Maithili and Bhojpuri of Bihar.

Being the official language of six States and the Indian Union today, Hindi is receiving high patronage. This patronage and support has encouraged the development of Hindi as a great literary language.

Kannada, the official language of the state of Karnataka, belongs to the Dravidian family. The majority of its speakers is found in Karnataka where they form more than 65 per cent of the population. Kannada, as an independent language, dates from the 9th century. It has rich literary traditions.

Kashmiri, a language of the Indo-Aryan group, is often mistaken as the state language of Jammu and Kashmir. Urdu is the State language of Jammu and Kashmir.

Kashmiri-speaking population in Jammu and Kashmir comes to about 55 per cent of the total population. Kashmiri literature goes back to A.D. 1200. It is comparatively a developed language. It is written, at present, in the Perso-Arabic script.

Malayalam, a branch of the Dravidian family, is the official language of the State of Kerala. Malayalam struck out on its own by the 10th century A.D. It is one of the most developed languages of India.

Marathi, belonging to the Indo-Aryan stock, is the official language of Maharashtra.

Though Marathi separated from the main Indo-Aryan stock at a very early date, its literary career began only in the 13th century. Since then, it has made great progress. It has today a fully developed literature of the modern type.

Oriya, a branch of the Indo-Aryan family, is the official language of the State of Orissa, where Oriya-speaking population comprises some 82 per cent of the population.

Oriya is found recorded as far back as the 10th century. But its literary career began only in the 14th century.

Punjabi, belongs to the Indo-Aryan family and is the official language of the State of Punjab.

Punjabi, though a very ancient language, turned literary only in the 15th century. From the 19th century, Punjabi showed vigorous development in all branches of literature. It is written in the Gurumukhi* script.

Sanskrit, the classical language of India, is also one of the oldest languages of the world—perhaps the very oldest to be recorded. It starts with Rig Veda, which appears to have been composed around 2000 B.C. Early Sanskrit is known as Vedic Sanskrit and covers the period between 2000 and 500 B.C. Classical Sanskrit covers the period between 500 B.C. and A.D. 1000.

Sindhi, is a branch of the Indo-Aryan family. It is spoken by some 16 million people, of whom $5^1/_2$ million live in Sind (Pakistan), and the rest mostly in India.

Sindhi has preserved some of the archaic features of the old Indo-Aryan language. Sindhi uses the Perso-Arabic script in Pakistan. Speakers in India use mainly the Devanagari script. Of late Sindhi has developed noteworthy literature also.

Tamil, the oldest of the Dravidian languages, is the State language of Tamil Nadu. Tamil literature goes back to centuries before the Christian era. "In originality, though not in extent, Tamil literature stands by itself." It represents certain new literary types which are not found in Sanskrit or other Aryan languages. The language is spoken by 64 million or more and judging by its modern publications, it is advancing at a fast pace.

Telugu, numerically the biggest of the Dravidian languages, is the State language of Andhra Pradesh. Next to Hindi, it is the biggest linguistic unit in India. Telugu is found recorded from the 7th century A.D. But it was only in the 11th century that it broke out into a literary language.

Urdu, the State language of Jammu and Kashmir, is spoken by more than 28 million people in India (1981 census).

The name Urdu is derived from 'Zaban-e-Urdu-Muala' which means the language of the exalted camp or court. The exalted camp or court here meant the camp or court of the

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*'Gurumukhi' literally means 'from the face of the guru'. It is the name given to the script devised by the Sikh guru. Guru Angad, in the 16th century. The Gurumukhi is based on the old Sharda script, which is related to the Nagari script.

A Case For Konkani

Mr. P.V. Narasimha Rao's assurance to Manipur that the government would consider a consitution amendment bill to incorporate Manipuri in the eighth schedule of the constitution, and a similar commitment from him with regard to Nepali (Gorkhali) have evoked wide-spread interest in Goa, where the Konkani-speaking people have long been pressing for the inclusion of their language in the eighth schedule. No wonder, the people of Goa and other Konkani-speaking people living outside Goa, welcomed Goa government's cabinet resolution seeking the inclusion of Konkani in the eighth schedule.

By including only 15 languages, the schedule discriminates between major and minor languages. This goes against the basic tenets of the consitution which professes to equally treat all the linguistic groups in the country. Besides, there are certain anomalies in the exclusion of Konkani from the eighth schedule.

First, nowhere does the constitution lay down any criteria for the inclusion of a national language in the eighth schedule. For example, Sanskrit, which a handful of Indians claim as their mother tongue, finds a place in the schedule, even though it is not even the official language of any state. The eighth schedule was amended to include Sindhi which hails from Pakistan. However, several other languages which are recognised by the Sahitya Akademi as independent Indian languages are yet to find a place in it. Not all languages recognised by the Akademi are official languages of any state. But the cases of Konkani, Manipuri and Nepali are different. They have their own literary and cultural history and are the official languages of their respective states. In this respect, their claim is far more jnustified than that to Kashmiri and Sindhi.

Second, Goa did not form part of the Indian Union when the constitution was adopted. Naturally, one could not complain about Konkani's exclusion from the eighth schedule so long as its homeland was out of the Union. But when the constitution was amended in 1961 to formalise the merger of Goa into the Indian Union, justice demanded that its language too be granted recognition in the eighth schedule to provide an opportunity to the Konkani-speaking people of Goa to be equal partners in the task of nation-building. Goa has since become a full-fledged state and has adopted Konkani as the official language of the state. And since its literary status has been recognised by the Sahitya Akademi, there is no reason why the discrimination should still continue.

The disadvantages to Goa of not having a place in the eighth schedule are many. The National Book Trust refuses either to publish books in Konkani or to accept Konkani books for translation into other languages, only because the languages does not figure in the eighth schedule.

All India Radio and Doordarshan treat Konkani dismissively for the same reason. While AIR allots very little space to Konkani programmes broadcast from Bombay, Dharwad, Mangalore, Trichur and Trivandrum, where the number of Konkani-speaking people is sizeable, its Goa station too has not done any better. In fact, the AIR Bombay station has, over the years reduced the time orginally allotted for Konkani broadcasts. AIR's external services division, which catered to the cultural needs of a large number of Konkani-speaking people living in Africa and the Gulf countries, has abruptly terminated its Konkani broadcasts along with news broadcasts in Konkani language.

Doordarshan recently started telecasting a 30 minute Konkani programme from its Panaji station. But because of inadequate technical facilities, the programmes failed to satisfy the expectations of the viewers. Worse, Doordarshan has left out Konkani telecasts from its national network, denying a large number of Konkani-speaking television owners the benefits of watching programmes in their language.

The AIR news services division does not broadcast Konkani bulletins, as it does in other languages. The directorate of advertising and visual publicity does not carry out any publicity campaign in Konkani for the same reason.

Most unfortunate, Konkani poets are denied the opportunity to participate in the poetry symposia organised by AIR and Doordarshan on the occasion of national events on the same ground. Similarly, Konkani authors and artists cannot participate in cultural festivals organised by the government in other countries. The Human Resource Development Ministry does not extend to Konkani writers in other languages, emeritus fellowships and other scholarships on the same ground.

(Excerpts from an article by ***Dattaraj V. Salgaokar****).*

ruling Sultans of Delhi.

Urdu and Hindi have proceeded from the same source, that is, from the Khariboli speech of Delhi and surrounding areas. The Khariboli was a spoken language which prevailed around Delhi, since the 13th century.

In the 19th century, when the Delhi Sultanate disappeared and the British became the rulers, Sir Sayyed Ahmed Khan (1817-1898) started a revival of Urdu, as the language of the Muslims in India. Modern Urdu was thus born.

Urdu has produced an extensive literature. Muslim speakers of Urdu use the Perso-Arabic script while Hindus use the Devanagari script. Urdu is also written in Roman characters.

Art. 343 of the Constitution provides that for a period of 15 years from the commencement of the Constitution the English language shall continue to be used for all official purposes of the Union. It was expected that after the expiry of the stipulated period (that is after 1965) Hindi would displace English as the official language of the Union.

Subsequent developments have turned the current in favour of continuing English as an additional official language, no definite date being fixed for its elimination and replacement by Hindi.

As matters stand, the languages listed in the Constitution remain the official languages in the respective States, while Hindi and English continue to be used for inter-State correspondence and for all-India use generally.

INDIAN LITERATURE

Indian Literature is one though written in many languages—this has been the slogan of the Sahitya Akademi ever since its inception in 1954. There are 15 officially recognised languages in India and each has produced a literature of great vitality and richness. Though distinctive in parts, all stand for a homogenous culture that is the essence of the great Indian Literature.

The Indian Constitution has officially recognised 15 languages after taking into consideration their numerical, commercial, political and cultural importance. But the number of mother-tongues as per 1961 Census is 1652. This bewildering figure has been arrived at, taking into account even dialects spoken only by five persons. The 1971 Census gives a more realistic figure of 700, having taken into account the dialects spoken by 1000 people and above.

These languages belong to four major speech families—the Aryan, the Dravidian, the Sino-Tibetan (or Mongolian) and the Austric. But the 15 major languages come under the Indo-Aryan (11) and the Dravidian (4) families. They are also literary languages. The Sahitya Akademi (the National Academy of Letters) has approved not only these 15 languages, but also English and six more Indian languages (Dogri, Konkani, Manipuri, Maithili, Nepali and Rajasthani) for its activities.

The addition of six languages was done after a good deal of deliberation by expert committees appointed by the Akademi since 1960. Thus we can say that Indian literature is produced in at least 22 languages. In other words, there are 22 Indian literatures recognised by the Sahitya Akademi.

Since its inception in 1954, the Sahitya Akademi has been propagating the idea of cultural unity by using the slogan "Indian Literature is one though written in many languages", This aphoristic statement is honestly questioned by thinkers who point out that literature is language-based and hence it is intrinsically linked with the language in which it is written.

The literature of a particular language has its own special form, symbols and nuances. Therefore it is more logical to say that there are as many literatures in India as there are languages which have flowered into literature. This approach has its own relevance and force. But there is another side to the question. When we survey the various literatures of India, it is possible to recognise some common characteristics which reveal their Indian-ness, some threads which hold them together despite their distinctive flavour or diverse association. The idea of one-ness of the literature is a *concept*, and this cannot be questioned.

The like-minded response of our creative writers in the many languages to common problems and similar experiences is unmistakably clear. Therefore the use 'Indian Literature' in the singular is as acceptable as its use with the plural. As a matter of fact, Western Orientalists and Indologists as also Indian scholars and historians have used the term in the singular and also in the plural as evidenced from the titles of books written by them and no one has questioned the usages. But it is significant that no one uses the term 'The Indian Language' (in the singular) as there is no language which can make such a claim.

English has been used by Indians for literary expression in the last 200 years. Thus we have 22 developed languages in India, which produce 22 literatures and these have a substantial common denominator justifying the expression 'the Indian literature'.

These 22 languages are not equal in their development and national or state support. No doubt all the regional languages have received a fillip after the attainment of independence. English, though foreign in origin, still plays an important role as the Associate Official language and the most effective link language both within India and outside India. Indians have made their own contribution to the English language in creative writing and in intellectual pursuits. That is why the Sahitya Akademi has approved it for its programmes.

Even the 15 scheduled languages which the Akademi had originally approved differ in their background, historical development and functional relevance. Sanskrit language and its literature has a special place in our civilization. It is the oldest classical language and had functioned as the most powerful formative agency and integrating force from the very beginning of Indian history.

Spoken Sanskrit (by whatever name it has been called) is the fountain from which the languages of Aryan India had originally sprung; the principal portion of their vocabulary and their inflexional system being derived from this source. Even the Dravidian languages which have a considerably different morphological system are indebted to Sanskrit in the realms of vocabulary and phonology with the partial exception of Tamil. Actually, there is no important language or literature in India which has not been influenced and enriched by Sanskrit and its great literature. Traditional Indian culture cannot be properly understood without the help of Sanskrit. This has been well recognised by orientalists but the complementary role played by ancient Tamil works representing the Dravidian stock has not been appreciated as much as it should have been.

Next to Sanskrit comes Tamil with reference to the anitquity of literature. Except Tamil in the South and Urdu in the North, almost all the modern Indian languages emerged more or less within the same period of Indian history. Urdu has only a heritage of about five centuries.

As regards state patronage there is considerable variation. Hindi has a pre-eminent place in the national set-up as the official language of the Union of India and that of six states. Kashmiri and Sindhi have no state to support them as official languages. Sanskrit remains apart as a classical language, the other languages each has a state to support and foster: Assamese (Assam), Bengali (West Bengal), Gujarati (Gujarat), Kannada (Karnataka), Malayalam (Kerala), Marathi (Maharashtra), Oriya (Orissa), Punjabi (Punjab), Tamil (Tamil Nadu), Telugu (Andhra Pradesh) and Urdu (Jammu & Kashmir). Brief reviews of the twenty-two literatures are given below:

> ***We have 22 developed languages in India, which produce 22 literatures and these have a substantial common denominator justifying the expression 'the Indian Literature' with its intrinsic variety.***

ASSAMESE

Though the antiquity of the Assamese language can be traced back to the seventh century A.D. it sprouted literary forms only by the 13th century. Rudra Kandali's translation of 'Dronaparva' (of the *Mahabharata*) and

Madhava Kandali's rendering of the *Ramayana* are two works of classical eminence of the early period. The new Vaishnavite movement in the 15th century AD gave an impetus to the vermacular literature. Sankara Dev (1449-1568), during his long life, popularised the movement by his great poetic compositions, dramas and lyrics.

The poetical compositions from the 16th to the 19th centuries may be classified into six categories: (i) translation from the epics and puranas, (ii) *Kavyas* based on episodes, and stories from the epics and puranas, (iii) lyrics, (iv) secular and utilitarian *Kavyas*, (v) biographical works, and (vi) devotional anthologies and compendia. Traditional poetry was composed keeping an assembly of listeners in view as literacy was confined to the privileged classes.

For a period of about 40 years, Bengali language dominated in Assam especially in administration and education. But that came to an end with the renaissance of Assamese.

The great names that should be remembered are Bhattadev (1558-1638) who popularised Assamese prose, Damodara Dev who wrote important biographies, and Purushottam Thakur who wrote grammatical works. The Buranjis constitute a glorious chapter in Assamese literature. Actually modern Assamese prose emerges from Buranjis, though the European missionary also has an important role in the shaping of modern prose. In the 17th century a prose version of the *Ramayana* was written. Literature also broke out into secular channels.

The last three quarters of the 18th century and the first half of the 19th century were on the whole a barren period. Then with the influences of the West, the modern period commences. For a period of about 40 years (1836-72) Bengali language dominated in Assam especially in administration and education; but that came to an end especially when the Christian Missionaries started their work of compiling dictionaries and writing grammars of Assamese and translating the Bible in simple prose. The translation of the whole Bible into Assamese by the missionaries and its publication in 1813 was an important event.

The leaders of renaissance in Assamese literature are Chandrakumar Agarwalla (1858-1938), Lakshminath Bezbarua (1867-1938), and Hemachandra Goswami (1872-1928). The monthly *Jonaki* which ushered in the romantic movement was founded by them. The leading novelists of the 19th century were Padmanath Gohain Barua and Rajanikantha Bardoloi. Both of them have written quite a few historical novels. In the field of social novel, the important names are Dandinath Kalita, Daiba Chandra Talukdar and Bina Barua. In the post-Independence period the more important fiction writers are Syed Abdul Malik (b. 1919), Jogesh Das (b. 1927) and Briendra Kumar Bhattacharya (b. 1924), the last one has annexed the Jnanpith Award (1979) for the novel *Iyaringam* (people's Reign, 1960) which deals with the life of the Nagas and their struggle for an independent Nagaland. Besides social novels Assamese has a good number of regional and biographical novels. Assamese is fairly rich in short story, personal essay, biography and other forms of modern prose. Both in poetry and prose, a Marxian emphasis is evidenced in the forties and fifties of the present century. Western literature has considerably influenced contemporary writing. The influence of French symbolists and English poets like T.S. Eliot is quite patent.

BENGALI

Historians of Bengali literature find early forms of Bengali writing between the 8th and the 12th centuries AD. Among these the Natha literature of the 12th century is more important from the literary point of view. This form of literature has emerged from the Buddhist Sahajiya cult. The Vaishnava cult also gained ground. From the middle of the 14th century, Radhakrishna lyrics became very popular and Chandidas was the great spokesman of this form of writing. He has composed about a thousand poems.

Translations or rather adaptations of the *Ramayana* became very popular in the 15th century. The most well-known is the *Ramayana* by Krttivasa Ojha. Critics consider it an adaptation of one particular book. *Ramayana* of Krttivasa is revered as much as *Ramacharitamanasa* of Tulasidas in North India.

The types of literature which became popular after the Bengali rendering of the classical Sanskrit works, are called *Mangal Kavyas.* They are long narrative poems extolling the struggle of a god or goddess to establish himself or herself against certain rivals. There are three recognised varieties of *Mangal Kavyas:* (i) *Manasamangal* (ii) *Chandimangal* and (iii) *Dharmamangal*, each representing a separate godhead.

The advent of Sri Chaitanya (1486-1533) was an epoch-making event in Bengali literature which spread to neighbouring languages as well. The life and teachings of Chaitanya made Vaishnavism a living faith. Many of his disciples produced literature of great power and the influence continued for over two centuries. The literature comprised two classes, lyric poetry and biographical works. The Radhakrishna love songs were so popular that even Muslim poets composed some poems on the same theme.

The 18th century was, comparatively speaking, a period of decadence in Bengali poetry. The modern period begins practically with the 19th century. Bengali prose evolved and developed in such a manner that it became a suitable medium for literary expression. For this the European missionaries and the English-educated Bengali were to a great extent responsible. The missionaries produced grammars and dictionaries and they translated the Bible into Bengali prose.

The establishment of the Fort William College at Calcutta in 1800 was an epoch-making event. The contribution of William Carey, a Serampore missionary was so substantial and significant to Bengali and other Indian languages that it will never be forgotten. Carey wrote a Bengali grammar, compiled an English-Bengali dictionary and organized the translation of the Bible into Bengali.

Translation of English literary works gave a fillip to Bengali prose writing. At the same time, translation from Sanskrit was not disregarded. While poetry gained a new dimension, new literary forms like the novel, the short story, the personal essay and biography took shape in the language. The most outstanding poet of the mid-19th century was Michael Madhusudan Dutt (1824-73) who composed the classic *Meghanad Badh Kavya*, the first epic poem in Bengali in the western sense. He was inspired by Homer, Virgil and Dante. He also wrote some plays which differ from the traditional *yatra* type.

Bankim Chandra (1838-94) wrote his first romantic novel *Durgeshnandini* in 1865. This gave a thrill to the readers of Bengali and soon translations appeared in sister languages. Bankim wrote more such novels like *Anandamath, Rajsimha, Vishavriksha,* etc. that he was hailed as a pioneer novelist in India. Sarat Chandra followed him with several novels of classical dignity and charm. His *Nishkriti* (Release), *Bindur Cele* (Bindu's Ward) and *Srikanta* are particularly well-known. Another significant work of the period is the play *Nildarpaxn* (the Indigo Mirror 1860) by Dinabandhu Mitra. In the third quarter of the 19th century Bengali literature was brimming with activity in all the genres of literature.

But it reached the summit of its glory through the life-long service of Rabindranath Tagore. It was actually a spiritual endeavour for the bard. Thousands of lyrics, poems and songs, about a dozen novels, three dozen plays, volumes of short stories and a mass of prose literature flowed from his pen. His own translation of *Gitanjali* into English brought him international fame when he was awarded the Nobel Prize in 1913. His *Gora* is considered a very outstanding epic novel in our literature.

Bengali literature reached the summit of its glory through the life-long service of Tagore. It was actually a spiritual endeavour for the bard. The Post-Tagore period is also very rich.

The post-Tagore period of Bengali literature is also rich. Here we find novelists like Tarashankar Banerji, Manik Banerji and Bibhutibhushan Banerji in the field of fiction, Jibananda Das, Nazrul Islam, Sudhindra Nath Datta, Buddhadeva Bose, Premendra Mitra and Bishnu De in poetry, Dinabandhu Mitra, G.C. Ghose and Dwijendralal Roy in the field of drama and a host of others who have an established reputation in Bengali. Quite a few of them are known beyond the borders of Bengal, Bibhutibhushan's *Aranyak* (Pertaining to forest, 1937) and *Pather Panchali* (Saga of Path, 1929) are extremely sensitive novels translated into many languages. Tarasankar's *Gana Devata* (God of the Masses, 1942) and *Arogyaniketan* are equally well known. Manik Bandopadhyaya's *Padmanadir Maghi* is another great novel. It may also be stated that several movements in literature sprouted in Bengali first and then spread over to other languages in India. Some works of Post-Independence period in Bengali literature have also influenced other Indian literatures, though not to the same extent as the Tagore-period.

DOGRI

Dogri is one of the modern Indian languages spoken in the state of Jammu and Kashmir and also in Himachal Pradesh. It has traces of the old Sanskrit dialects as well as the dialects spoken by the Khasas, Yavanas, Takkas, etc. in the Dogra Hill areas. Rev. Carey has made mention of it in 1816 and John Beames in 1867. Its old script Takari has been replaced by the Devanagari script.

Dogri has a rich tradition of folk literature consisting of folk-tales, riddles and proverbs. These deal with every aspect of life from the cradle to the grave. There are also quite a few long narrative poems in praise of gods known as *Bhetas.*

Dogri, one of the modern languages spoken in Jammu and Kashmir and Himachal Pradesh has a rich tradition of folk literature. These deal with every aspect of life from the cradle to the grave.

Among the earlier Dogri poets mention may be made of Manak Chand (16th century), Gambhir Rai (17th century), Devi Ditta (18th century) and Ganga Ram (19th century). Rajauli (the Genealogy of Kings) a translation of a Persian work by Teheldas (1614-59) is the earliest prose work in Dogri. The first book printed in Dogri is the translation of the New Testament brought out (in 1818) by the Serampore missionaries.

During the first four decades of the 20th century seven poets wrote in Dogri. Among them Hardutt Shastri (1890-1956) is the most outstanding. He wrote on socio-religious and patriotic themes. The first quarter of the 20th century is a period of great decline in Dogri literature with Urdu or Punjabi making inroads in the literary situation. In due course Dogri asserted itself. Dini Bhai Pant (b. 1917) is considered to be the first Dogri poet of modern consciousness. He gave a new dimension to Dogri poetry. Patriotism was the dominant theme of Dogri poetry for some years after the Pakistani invasion. It then gave way to the poetry of socialism. An important work to be mentioned here is the first anthology of Dogri poetry titled **Jogo Duggar (Awake the land of Dogrees,** 1949). It contains moving poems for 12 poets.

Ghazal is popular in Dogri. Kunwar Viyogi is outstanding in the composition of ghazals. Since 1950, over a hundred new poets emerged on the Dogri literary scene. The more prominent among them are Madhukar, Padma Sachdev, Charan Singh, Mohanlal Sapolia and Sarma Sarathe. Short stories are popular in the language. Narendar Khajuria writes fine stories and other forms of prose. He is a past-master in using irony and humour. There are also a few plays and novels in Dogri. Among the fictionsists Ved Rahi's name stands out. Others who have made significant contributions are Bhagawat Prasad Sathe, Ram Nath Shastri, Narendra Khajuria and Madan Mohan Sharma.

GUJARATI

Gujarati language evolved from one of the dialects of the standard Gurjara Apabhramsa and got a distinctive form by the 12th century. Jain influence is quite strong especially in the early periods. The history of Gujarati literature falls into four broad periods: (1) 1250-1456, (2) 1456-1650, (3) 1650-1825 and (4) 1825-1975.

By about 1250 Gujarat became an independent political unit with considerable achievement in art and literature. Sanskrit was cultivated and libraries were set up in the monasteries. Saivism became strong. Heroic romance, historical chronicle and the romantic tale are the prinicipal narrative forms of this early period. *Rasa,* originally a folk-dance was converted into melodious dramatic poetry by Jain authors, *Phagu,* a shorter and more lyrical poem also became popular. Jinapadmasuri, Rajasekharasuri and Jayasekjharasuri (all of the 14th century) were important poets who popularised the *phagu*. Romantic tales in verse also were in vogue. The Jain scholars took to writing in prose which was elegant and simple. *Prithvichandra* (1422) by Manikyasundarasuri is a reputed work of poetical prose.

In the second period the language breaks away from the Rajasthani idiom. Hinduism takes the place of Jainism as the main source of literary inspiration. The epics and puranas flow into Gujarati. The great poets of the period are Narasimha and Mirabai; the latter is being claimed by languages like Hindi and Rajasthani. Narasimha Mehta (1414-1480), though not the first Gujarati poet, is considered to be the father of Gujarati poetry like Ezhuthachan in Malayalam. His *Govinda-Gamana* and *Sudama Charitra* are very well known.

Mirabai (1499-1547) is the most celebrated woman poetess of India. Her bridal devotion to her Lord Krishna has a ring of purity and is a fine example of the sublimation of the sex element. After them comes Bhalana (1434-1514), the great scholar and artist who has adapted *Kadambari, Nalakhyana* and *Ramabalacharita*. Bana's prose work *Kadambari* has been rendered in a versified form.

Here Bhalana shows the art of pruning the luxuriance of the original and adding imageries of local significance. Nakara (1500-1575) and Vishnudasa (1564-1632) enriched the *Akhyana* literature. The *Ramayana*, the *Mahabharata* and the *Puranas* were brought into Gujarati in an assimilable form by them. Akho (1591-1656) of Ahmedabad was the champion of Vedantic poetry of Gujarati.

Thus we pass on to the third period when Akbar formed the province of Gujarat separating it from Marvad. Life was dull from about 1700 until the British came to the scene. Premanand (1636-1734) is the finest poet of this period. He brought the *Akhyana* technique to perfection. The 16th century was rich in romantic tales which were composed by Jain and non-Jain poets alike. We thus come to the modern period where the impact of the west is clearly seen in the literary productions. Dalapatram (1820-1898) and Narmad (1833-86) were the leaders of this new age. They were scholars and classical poets. Nandasankar's *Karana Ghelo* (1866) is the first novel in Gujarati. But the most celebrated novel *Saraswatichandra (1887-1901)* in four volumes came from the pen of Govardhanram Tripathi (1855-1907). It is considered to be one of the great classics of modern India. It is a love story with social and spiritual relevance.

In the field of fiction we have the stalwart, K.M. Munshi. He is the author of several historical and social novels and a master of Gujarati prose. One should not forget the valuable contribution of Gandhiji who influenced Gujarati writers to write simple and direct prose as also Kaka Sahib Kalelkar who wrote in Gujarati, Hindi and Marathi with equal ease.

Coming to the contemporary period Gujarati flourished in all genres of literature, the most outstanding poets are Sundaram and Umasankar Joshi, (novelists Pannalal Patel, (who won the Jnanpith Award of 1985) and Dhansukhlal Mehta. Among the playwrights, the names of C.C. Mehta, Umar Wadia and Shivkumar Joshi may be mentioned.

> ***Mirabai is the most celebrated poetess of India. Her bridal devotion to her Lord Krishna has a ring of purity and is a fine example of the sublimation of the sex element.***

Sundaram and Umashankar Joshi (who was president of Sahitya Akademi for a term) are considered twin poets of the modern period. *Kavyamangala* and *Yatra* are considered major collections of Sundaram's poetry. Joshi's *Viswasanti* is a long poem on the life and work of Gandhiji. Equally well known is his last collection of poems entitled *Saptapadi* (1981). He has written poetry on love, nature, God, the Freedom Movement, the Agony of Partition and on everything concerning modern day life. C. C. Mehta is a veteran in the field of Drama. His *Agagadi* is considered a landmark in Gujarati literature. Kaka Kalelkar's autobiography *Smarana yatra* is a magnificent piece of writing. Equally fascinating are the short stories of Gulabdas Broker.

HINDI

The Hindi language comprises a number of dialects of which those used for literary composition are Khariboli, Rajasthani, Maithili, Brajbhasha and Awadhi. Khariboli became the chief literary medium only by the 19th century. The early period of Hindi literature which is called *Adikala* is accepted as the period upto mid-14th century.

The main groups of trend-setters in this period were: (i) the Siddhas, (ii) the Jain Poets, (iii) the Nathapanthis and (iv) the heroic poets. The Siddhas belonged to the later Buddhistic cult called *Vajrayana*. The *Nathapanthis* adhered to a cult in which *Hatha yoga* was practised. The works of heroic poets are generally known as *Rasau* poems (derived from *rasa*, a style of verse biography which was also sung),

The second period which consists of the mid-14th to mid-17th century is dominated by devotional poetry (*Bhakti Kavyas*). The Hindi *bhakti* poetry consists of two streams: (i) *Nirguna*—the poets who believed in a formless God or abstract name: (ii) *Saguna*—the poets who believed in singing and writing about a God with attributes (human incarnation like Rama in particular).

Bharatendu Harischandra was the pioneer who ushered in the modern period of Hindi literature. He deliberately made Khariboli the medium for his prose and dramatic writings.

Kabir (1398-1518) is the most important poet in the *Nirguna* school. He preached the universal religion of man above and beyond Hindu or Muslim orthodoxy and composed a large number of songs and poems. Guru Nanak (1469-1538), the founder of Sikhism, is also accepted as an outstanding poet of this school.

The *Saguna* stream is related to Vaishnava poets who belong to two categories, those worshipping Krishna and those worshipping Rama. Surdasa whose poems have been compiled under the title *Surasagara* was a great poet of Krishna poetry. Vidyapati claimed by Bengali and Maithili was a versatile composer of Hindi poems also.

The great champion of Rama poetry is Tulasidas (1543-1623) whose *Ramacharitamanasa* is considered an immortal classic by all lovers of Hindi poetry. He has command over all the important styles of composition—narrative, epic, lyrical and dialectic. He has given a human character to Rama, portraying him as an ideal son, husband, brother, king and so on. Tulasidas considered Siva and Vishnu as two aspects of the same supreme being and this brought about unity among the Hindus.

The third period is spoken of as the *Ritikavyakal*. It is also referred to as the *Ritismgara* Kavya. Though literally the word riti means 'a way of writing poetry' in Hindi it refers to a special form in which the erotic element is preponderant. The *riti* can either be explicit or implicit. Hindi is very rich in both these categories of poetry. During the same period Hindi had also a good collection of Devotional poetry and Historic poetry. In the *Bhakti* period there were many epics and long narrative poems composed in the dialects of Hindi (Awadhi, Brajbhasha, etc.).

The modern period of Hindi literature commences with the second half of the 19th century. Bharatendu Harischandra (1850-84) was the pioneer who ushered in the modern era. He deliberately made Khariboli the medium for his prose and dramatic writings. But, for poetic composition he used Brajbhasha.

Other important writers of this formative period are Maithili Saran Gupta (1886-1964), R.N. Tripathi (1889-1962) and Gopala Sarana Sinha (1891-1960). Maithili Saran revived the epic tradition. Far-reaching events in the national and international spheres had their effect on Hindi literature. The romantic upsurge spoken of as Chayavada is an important element of the period.

Jayashankar Prasad, Suryakant Tripathi 'Nirala' and Sumitra Nandan Pant are the leading luminaries of the movement. *Kamayani* by Jayashankar published in 1936 is hailed as a magnum opus. It is the psychobiological journey of a man through time and space. Mahadevi Varma is one of the major poets of the *Chayavad* school.

In the second phase of the modern period, which is referred to as the *Dwivedi yug*, the leading figure obviously was Mahavir Prasad Dwivedi. Poetry, Drama, Novel, Short story and the Essay flourished on account of western impact. Drama in Hindi has a long history from the 14th century. But the prose-drama developed only towards the close of the 19th century.

Bharatendu and Jayashankar Prasad have written quite a few plays. In the field of fiction, the great stalwart no doubt is Premchand. His novel *Godan* has been translated into many languages, Indian and foreign By his novels and short stories, Premchand raised Hindi literature from the plane of entertainment to one of contemporary realism. He was the champion of the progressive movement. Other important novelists of the contemporary period are Jainendra Kumar, Phaneswar Nath Renu, and Satchidananda Vatsyayan. Jainendra Kumar in his novels *Sunita* and *Tyagapatra* concentrated on human psyche. Renu gave a new dimension to novel writing by introducing the regional novel, the classical example being his *Maila Anchal*. Vatsyayan (Ajneya) is the initiator of a new trend in Hindi literature called *Prayogavad* (experimentalism). Both in poetry and fiction his contribution is outstanding. *Sekhar Ek Jivani* (1941) has been acknowledged as his most important novel. Dharma vir Bharati, Girija Kumar Mathur, Muktiboth, and Lakshmi Kant Verma are other distinguished experimentalists of the post-Independence period.

KANNADA

Kannada has a long history of literature next only to Sanskrit and Tamil. Though Dravidian in its origin, Kannada has been considerably influenced by Sanskrit and even the early literature bears witness to this phenomenon. According to some scholars the language flowered into literature as early as the 5th century AD. Nripatunga of the late 9th century refers in his work *Kavirajamarga* to a number of predecessors who wrote prose and verse. There were also important works on grammar and rhetoric. Though Sanskrit had a hold on the people as a religious and fashionable language, Nripatunga voiced the glories of his mother tongue.

Works based on or inspired by Sanskrit epics such as the *Mahabharata* and the *Ramayana* formed the earliest literature in Kanada. The three gems of early Kannada poetry, Pampa, Ranna and Ponna (all born in the 10th century), rendered the epics in Kannada. The early writers were also promoters of the Champu style and some of them have written about Jaina Tirthankaras.

Kesiraja's *Sabdamani darpana* (c. 1260 AD) is the first standard grammar of the Kannada language. Nagavarma II has written three works on language, literature and grammar, viz. *Kavyalokana*, *Bhasha bhushana* (in Sanskrit) and *Vastukosha*, a Sanskrit-Kannada glossary.

A great change took place in Kannada literature when Basaveswara (12th century) introduced the *Vachana* style of writing which caused a social revolution. *Vachanas*, or sayings, are simple in style, prose in construction, with a sort of ryhme, but pithy and proverb-like. The imagery in it belongs to the daily life of the ordinary man. This was imitated by other writers not only in Kannada, but in Telugu as well. Diginity of labour and equality of all members of the society were the cardinal points of the Basavesvara movement.

Other important poets of the era are Harihara, Raghavanka, Rudrabhatta and Janna. Kumara Vyasa (15th century) comes a little later. His epic Kannada Bharata is very well known. Actually Pampa and Kumara Vyasa are the giant genius figures in Kannada literature. We may also mention in passing the names of three more great poets. Lakshmisa (c. 1550), Sarvajna (c. 1600) and Sankaradeva (c. 1655). Jains, Virasaivas and Brahmanas have produced works on their respective religions and on various secular themes.

> ***Kannada has a long history of literature next only to Sanskrit and Tamil. Though Dravidian in its origin, Kannada has been considerably influenced by Sanskrit and thereby enriched.***

After a less fertile interregnum, we come to the period of Renaissance and the Independence era. Two trends are witnessed during this period almost simultaneously, the absorption of western ideas and a patriotic rediscovery of the past. Historians divide the modern period as follows: (i) 1850-1920: the period of cultural awakening: (ii) 1920-50: the period of great political struggle and also a reaction to it in the form of social realism, (iii) 1950-70: the period of disillusionment and of experimentation, (iv) 1970 onwards: the transitional period of political uncertainties.

The great writers of cultural awakening are B.M. Srikantaiah (1884- 1946) and

Gokak-Creativity Spanning Decades

The Jnanpith Award of 1990 has not come as a surprise to the noted Kannada writer Vinayak Krishna Gokak, for he knew he was being considered for the award for the last three years.

"Possibly this year, the panel of judges selecting the nominees for the award has come to a conclusion about it. It is but natural I am happy that I have been selected for the award", Mr. Gokak said on hearing the news.

Mr. Gokak, who is recuperating from a four-year-long illness has been living with his son A.V. Gokak who is and IAS officer – a Forest Secretary with the Maharashtra Government in Bombay.

Mr. Gokak who is 82, joins the earlier Kannada recipients of the Jnanpith Award – Dr. K.V. Puttappa (1967), Dr. D.R. Bendre (1973), Dr. K. Shivram Karanth (1977) and Masti Venkatesh Iyengar (1973).

Mr. Gokak in his literary career spanning five decedes, has published over 60 books, including colections of poems, novels, travelogues, essays, and literary criticism. His works include three collections of poems in English.

Talking of his magnum opus Bharat Sindhu Rashmi *(1982), Mr. Gokak said that the two-volume collection of Kannada verse on the poet's integral vision of life and literature took him nearly eight years to complete. Like his work* Dyava Prthvi *which won him the Sahitya Akademi Award, it was one of his most satisfying works. This voluminous work comprised 34,000 lines.*

He has a very pleasant memory of the experience while writing Samudra Geethegalu *(the songs of sea). He was on a maiden voyage to England in 1936. "The atmosphere around me aroused in me a sense of freedom. The storm, its rhythm and the terrific sound the ship was making as it negotiated the rough sea waters made me throw the traditional style of writing to the winds and resort to a new genre of free verse. Words just flowed. By the time I had completed a fortnight-long journey to England, I had penned at least 40 verses."*

Published six years later, it went on to win considerable critical acclaim for its freshness and unorthodox style.

Mr. Gokak, who began his literary career with a lyrical composition Kalopasaka *in 1934, attributed the influence of the leftist ideals in some of his writings to his association with an American student, in England between 1936 and 1938.*

A former Vice-Chancellor of the Bangalore University and also former president of Sahitya Akademi, Mr. Gokak has not been writing since he took ill five years ago. "Given my advancing age, I will not be able to engage myself in elaborate writing exercises any longer." he said.

M. Govinda Pai (1883-1963). Srikantaiah's *Inglis Gitagalu* (Songs from English, 1921) marks a turning point in verse composition. The poets of stature who followed are K.V. Puttappa (b. 1904) whose *Ramayanadarsanam* has been acknowledged as a modern classic and D.R. Bendre (1896), a great lyricist, both of them have won the Jnanpith Award.

Two novelists who won the same award are Masti Venkatesh Iyengar (1891-1986) and K. Sivaram Karanth (b. 1902) Karanth's *Chomana Dudi* presents the tragic plight of a Harijan in contemporary society and his *Marali Mannige* (Back to the Soil) is an outstanding regional novel translated into many languages. Masti is considered the father of Kannada short story. Among the modern dramatists the tall figures are Adya Rangacharya and T.P. Kailasam. One notable feature as far as modern Kannada literature is concerned is that there are quite a few writers who have made a mark in more than one field: A.N. Krishna Rao (poet and novelist), V.K. Gokak (poet and novelist), Gopalakrishna Adiga (poet and essayist) and R.S. Mugali (poet and historian) are writers of repute. Kannada is flourishing in almost all branches of literature, and modernity is noticeable in various phases: pragatishila, *Navodaya* and *Navya*. The most important writers of the contemporary period are P. Lankesh, Nissar Ahmed, Girish Karnad, Chandrasekhar Kombar and U. R. Anantha Murthy.

Kashmiri has a fairly long tradition of poetic compositions but its prose is very recent. Kashmiri script is such that printing is very difficult and this has to some extent retarded the progress of prose.

KASHMIRI

Kashmiri separated from the parental *Apabhramsa* stock around the 10th century AD. By oral tradition the language has transmitted a good deal of folk items. Sanskrit flourished along with the prakrit of the area. Some historians consider the *Brihatkatha* in Sanskrit as an adaptation made from the mother tongue of Kashmiris.

The beginnings of Kashmiri poetry is an extension of the Saiva texts in Sanskrit like *Tantrasara* (11th century) by Abhinavagupta. The Saiva siddhas wanted to propagate thei views and beliefs. During the 14th centur two different religious traditions came face to face in Kashmir. By that time *Saiva darsana* had assimilated Buddhist as well as Vaishnavistic strands in it.

The tradition of Islamic faith from central Asian areas also came to Kashmir by that time. Nunda Rishi, the great poet was a product of this blended religio-cultural heritage. Persian continued as the official language for over 600 years. Consequently Kashmiri was cultivated only as the medium of low-brow expression. Later in point of time, Urdu poetry exerted its own influence on Kashmiri.

The following technical terms, for literary genres in Kashmiri will indicate the nature of influence on Kashmiri verse: 1. *Vak* (from Sanskrit) is a metrical utterance with a spiritual content. 2. *S'ruk* from Sanskrit *sloka* is akin to *vak* applied to the Sufistic context 3. *Paband* (from Sanskrit *Prabandha*) is a cantoed composition. 4. *Vatsun* (from Sanskrit vacana) is song with a refrain.

There are five varieties of *Vatsun*. *Masnavi* taken from the Persian tradition is a couplet form with rhyme. It is either a praise of God or a panegyric addressed to a royal patron. In addition we have *Lila, Pad, Dastan, Marsi* and *Ghazal* showing the many varieties of verse composition. This fertile period from 1200 to 1900 AD is usually divided into 5 phases.

In the beginning of the modern period the pioneering poet was Mahjur (1885-1952). His ghazals are well known. Zinda Kaul Masterji (1886-1966) is another outstanding poet of modern Kashmir. The influence of the West is clear in later periods. This is particularly so when drama and prose literature are taken up for consideration. Kashmiri has a fairly long tradition of poetic compositions, but its prose is very recent.

Urdu is the official language of the state of Jammu & Kashmir and the educated people cultivated competence in that language. Kashmiri fiction originated with the progressive movement of the forties. And important writers, like Akhtar Mohi-ud Din (b. 1928), Mohammed Amin Kamil (b. 1924) and Ali Mohammad Lone (b. 1926) actually switched over from Urdu to Kashmiri. *Doed-Dog* (Pain and Anguish) by Aktar, *Gati Mans Gash* (Daylight in the Dark) by Amin and *Asi Ti Chi Insan* (We too are Human) by Ali are considered to be outstanding novels in Kashmiri. The script used by Kashmiri is such that printing is made difficult. This has to some extent retarded the progress of prose-writings and its popularisation.

KONKANI

Though Konkani is an independent language, in many respects it is close to Marathi; and Hindi. Thus its natural script is Devanagari though Kannada, Malayalam and Roman scripts have also been in use depending on circumstances.

Konkani developed an indigenous literature long before the Portuguese conquest, but much of it has been lost. The Konkani poets of the traditional type made the devotional works of the Maratha Brahmins their own. Tales of the *Ramayana* and the *Mahabharata* are preserved in the Roman script. Krishnadas Sharma (16th century) had done the translation from the Marathi original.

Father Joachim de Miranda (18th century) is the author of the largest Konkani hymn *Riglo Jesu Mollantum* (the Resurrection of Jesus). Another important work *Papience Xerathini* (Protector of Sinners) is by Dona Barreto. A considerable amount of Christian literature was written in Konkani during the 17th century.

The modern creative phase of Konkani literature began during the 20th century. The genius of Shenoi Goembab (1877-1946) was the main inspiration. Among the modern poets, special mention may be made of B. Borkar (b. 1910), M. Sardesai (b. 1925), and R.V. Pandit (b. 1917). Borkar writes in Marathi too. Even in his first collection of 40 Konkani poems *Paimzonam* (Anklets) one notices the variety of themes and techniques employed by him.

Konkani plays, particularly of the folk variety, are quite popular. Fiction is gaining ground in the contemporary period. The important novelists are Reginaldo Fernandez, M. Sardesai and V. J. P. Saldhana. Journalism is developing fast which also means the Konkani prose is coming into its own.

Though Goa is the place where Konkanis live in large numbers, strong groups are found particularly in Mangalore, Bombay and Kerala. Literature is being produced in all these areas in a limited way. In the last quarter of a century, however, Konkani literature is finding its place in the main stream of Indian literature and also sharing its heritage with sister languages.

MAITHILI

The present day Maithili speaking area is about 30,000 square miles in extent. The first important literary work is a collection of Buddhist mystic songs called *Caryapadas* (8th to 11th century). In the age of Jyotiriswara (c. 1300-1400) Maithili literature flourished. He himself contributed several works in poetry, drama and prose. His most famous work is the play, *Dhurttasamagama*. Vidyapati (1360-1448) was patronised by several kings and queens. He wrote of love and separation, of nature, of devotion to Ganges, Krishna. Siva, Sakti and of birth and death. The next stage in the development of Maithili literature was the rise of medieval drama. Nandipati's *Srikrishnakelimala*, Upadhyaya's *Parijataharana* and Ratnapani's (c. 1850) Ushaharana are outstanding works.

The modern creative phase of Konkani literature began during the 20th century. The genius of Shenoy Geombab was the main inspiration. There are quite a few writers who are very popular.

Coming to the modern period, we have quite a few poets, novelists and prose writers who are very popular. Some important names are Manabodha, Vaidyanatha, Parameswara Jha, Harimohana Jha, Kumara Gangananda Sinha, Mayananda, Lalita, Dhirendra, Ramananda Renu and Somadeva.

Harimohan Jha, a versatile writer, is the author of *Kanyadan* (1929-33) which is considered the most outstanding novel in Maithili. It deals with the plight of an un-educated girl married to a westernized young man. He is also the author of several short stories and plays, long and short. Other fictionists of note are Yoganand Jha, Upendra Jha, Manindra Narayan Choudhure and Mayanand Mishra. Among playwrights, the names Mahendra Malargia, S. S. Choudhuri, Kumar Akku and Ramdev Jha deserve mention.

MALAYALAM

The early period of Malayalam literature consists of a triple stream. (i) The Pacha-Malayalam stream, by which we mean literary expression in pure Malayalam without any admixture, (ii) The Tamil stream and (iii) the Sanskrit stream. The first stream consists of ballads and folk-songs, which are difficult to date. Songs connected with religious rites such as *Bhadrakali Pattu,* Thiyattupattu, Sastrakali, Thottampattu and later in point of time, 'Margamkalippattu' are important varieties. Then we have festival songs like *Onappattu* and *Krishipattu* and ballads of North Malabar and South Malabar.

The missionaries tried to popularise colloquial idiom in Malayalam. Poetry got a new dimension (lyrics, odes, etc.) and prose got new literary genres. Western influence reflects in creative writing.

In the Tamil stream (pattu school) the most outstanding work is *Ramacharitam* (12th century AD) composed in a language which is a mixture of Tamil and Malayalam. The mixing happens in the area of grammar as well. The author is one Chiraman and only *Yuddha kanda* has been taken up by the poet. After this magnificent long poem, we have the works of Niranam poets, *Kannasa Ramayanam, Bhagavad Gita* and *Bharatamala.* As compared to *Ramacharitam* the Tamil influence in these works is much less. The Niranam poets (Kannassan group) were great scholars and literary luminaries.

Sanskrit language and literature had a predominant influence on the native language of Kerala. It has resulted in a peculiar variety of literary dialect called *manipravalam* and hence this stream is also referred to by this name. *Lilatilakam* (14th century) is the earliest book dealing with certain aspects of Malayalam grammar devoting most of its space to the grammar and rhetoric of Manipravala compositions. Such compositions come under two main literary forms, *Sandesha Kavyas* and *Champus.*

Among the many *Sandesha* (message) poems, the most outstanding is *Unnunili Sandesam* (14th cent.) whose authorship is unknown. The most well known early Champus are *Unniyaticharitam* and *Unnichirutevi charitam.* The three streams were influencing each other and by about the 15th century, we have a great poem titled *Krishna gatha* composed in a blended dignified style, neither too high-brow nor too low-brow. Cherussery Nambudiri is the author of this long poem on Krishna. Throughout the whole range of Malayalam literature there is no personality who could come anywhere near Ezhuthachan (16th Century) in the grandeur of poetic quality. His *Adhyatma Ramayanam, Bharatam* and *Bhagawatam* are the greatest classics in the Malayalam language. *Kilippattu* is the name given to the form of verse he has made popular. The *Pattu* (song) of the *Kili* means parrot song and in this literary form Ezhuthachan has made use of a style which has set the standards for all time. His *Ramayana* and *Mahabharata* are great *Bhakti* poems in the language. Till about the 18th cent. *Kilippattu, Champu* and *Sandesha* kavya compositions had been produced by many a poet in Kerala.

Coming to the 18th cent. we have *Attakkatha* and *Thullal* compositions which have enriched Malayalam verse in a significant way. *Attakkatha* is the literature form used for the well known *Kathakali* performance. *Ramanattam* by Kottarakkara Thampuran is the first full-fledged *Attakkatha.* The great masters of this literary form are Kottayathu Thampuran (*Baka vadham, Kalakeya vadham,* etc.) Unnayi Variyar *(Nalacharitam–four days)* and Erayimman Thampi *(Uttaraswayamvaram, Dakshayagam* etc.)

Thullal is a more popular art-form and it has a considerable amount of good literature. This branch of literature is associated with the name of Kunchan Nambiyar who is its unrivalled master. He has about 45 *Thullal* pieces to this credit. The puranic theme he selects for his compositions are but pegs to hang his social criticism and his poetry brims with humour and satire. *Thullal* has great mass appeal.

Malayalam can claim to have a fairly long history of prose writings. *Anthasastra* has been adapted into Malayalam prose around the 13th cent. Then we have *Attaprakaram,* *Kramadeepikà* and *Dutavàkyam* assigned to the period between 14th and 17th cent. *Varthamana pusthakam* by Paremmakal Thoma Kattanar is a travelogue written about a journey to Rome (1776-86) in simple Malayalam. This is said to be the earliest travelogue written in any Indian language.

By mid-19th cent. we have missionaries like Bailey and Gundert compiling dictionaries, writing grammars and arranging translation of the Bible into Malayalam. The missionaries tried to popularise the colloquial idiom. Towards the end of the century, western impact finds expression in creative writing. While poetry gets a new dimension (lyrics, odes, etc.) new literary genres get established in prose.

Poets and scholars like Kerala Varma and Rajaraja Varma paved the way for an abiding renaissance in literature. Chandu Menon's social novels (*Indulekha* and *Sarada*) and C. V. Raman Pillai's historical novels (*Marthanda Varma, Ramaraja Bahadur* and *Dharmaraja*) are considered outstanding classics in the language. The contribution of the great-trio Kumaran Asan, Vallathol Narayana Menon and Ulloor S. Parameswara Iyer—has enriched Malayalam literature with their writings in verse and prose. This is considered the golden period in modern poetry.

Coming down to recent times we have poets like G. Sankara Kurup, who won the first Jnanpith Award and Changampuzha Krishna Pillai, Vailoppilli Sreedhara Menon, N. V. Krishna Warrier, O. N. V. Kurup, Vayalar, Rama Varma etc. as also fiction writers like Kesavadev, Thakazhi (who also has won the Jnanpith Award), Muhammed Basheer, Ponkunnam Varki, S. K. Pottekkad, (also a Jnanpith Award winner), P. C. Kuttikrishnan, Karoor, Kovoor, K. Surendran, Parappurathu, O. V. Vijayan and M. T. Vasudevan Nair; playwrights like E. V. Krishna Pillai, N. Krishna Pillai, Thoppil Bhasi, N. N. Pillai, T. N. Gopinathan Nair, K. T. Muhammad, C. J. Thomas, G. Sankara Pillai, and critics like P. K. Narayana Pillai, Kuttikrishna Marar, M. P. Paul, Mundassery, M. Govindan, S. Guptan Nair, M. Krishnan Nair and lots of others in all branches of literature too numerous to mention. And when one comes to the recent period, there are many writers who have made worthwhile contributions in all branches of writing.

MANIPURI

Manipuri is a Tibeto-Burmese language. It is an amalgam of seven dialects spoken by seven clans. The language has a script of its own. The history of Manipuri literature is divided into three periods: the Ancient Period from 33 A.D. to the end of the 17th century, the Middle Period from the beginning of the 18th century till the middle of the 19th century and the Modern Period from mid 19th century onwards.

Manipuri has a rich tradition of folk literature. As a matter of fact, the bulk of Manipuri literature down to the 19th century was folk in content and style. The folk literature consists of folk-songs, ballads and folk-tales. It is extremely difficult to date books and assign them to authors. The *Kumbaba* is a royal chronicle of Manipuri. It contains records from 33 A.D. when Pakhangba ascended the throne. Certain important prose works are *Numit Kappa* (Shooting the Sun, c. 10th century), *Naotinkhon Phambal Kaba* (between 1576 and 1697), *Lethak Lekharol* and *Pantoibi Khongul*, both of 17th century. The ancient Manipuri style is ornate and verbose.

Manipuri has rich tradition of folk-literature. The bulk of Manipuri literature down to the 19th century was folk in content and style. It consists of folk-songs, ballads and folk-tales

Specimens of traditional poetry are to be found in the translation and adaptations of Indian classics. The best specimen is *Hijan Hirao* (Royal Boat). In this poem, human qualities are ascribed to animate objects and nature. *Ram Nongaba* (Death of Rama) by Labanga Singh (18th century) describes the death of Rama in beautiful Manipuri.

Modern Manipuri poetry is recent in the sense that it had to wait till the second decade of this century to get a form. *Le Paren* (Garland, 1929) by Kamal Singh is an outstanding work. A.D. Singha (1907-44) is a composer of epic poetry in Manipuri. His *Kamsa Badha* (1942) is a notable work. There are also experimental poems composed after 1947, interesting dramas, about a dozen readable novels and some short stories of worth in Manipuri.

The first modern Manipuri novel is

Madhabi (1930) by Kamal Singh. It is a novel with a social message. There are a few other novels like this worthy of note. Poetry and drama also flourished in Manipuri in a limited way. The tensions witnessed by Manipuri after Independence find reflection in contemporary literature.

MARATHI

Marathi language was derived from Maharashtri Apabhramsa. The history of Marathi literature can be divided into six periods.

1. The Yadava period 1189-1320 A.D. 2. The Bahamani period 1320-1600 A.D. 3. The Maratha period 1600-1700 A.D. 4. The Peshwa period 1700-1850 A.D. 5. The British period 1850-1947. A.D. 6. Contemporary period since 1947.

During the first two periods. Marathi literary genius occupied itself chiefly with religious and philosophical exposition chiefly in verse. *Viveka Sindhu* (Sea of Philosophy) by Mukundaraj, a yogi of 'Natha Pantha' is accepted as the first major work. The origin of Marathi prose is also to be found in the Yadav period. The credit for it goes to another religious sect called the 'Mahanubhavas'. They eschewed Sanskrit deliberately and made Marathi a vehicle for the propagation of religion and culture. However, the influence of Sanskrit is seen in the acceptance of literary forms and theories.

rathi has a flour-ing contemporary rature in every nch of verse and se. Some of its ys have earned a utation beyond borders of Mahar-tra during the last arter of the cen-y.

An extremely effective revolt against Hindu orthodoxy came from Jnanadeva. *Jnanesvari* (a commentary on *Bhagavat Gita* and *Amritanubhava* (A Nectar of Experience) are his two masterpieces. Saintly singers sprang up in all castes and communities. Namdeva, who was a tailor became a disciple of Jnanadev (Jnaneswar). He became a great poet propagating a devotional cult called 'Varkari Panth', Gardeners, potters, goldsmiths and such other people extolled 'Bhagavat Dharma' in acceptable verse.

In the Bahamani period, conversion to Islam took place on a mass scale. The flame of Hindu religion, however, was kept up with considerable zeal. The works of Ekanath are to be specially remembered in this connection. He was a great saint and social reformer. His *Bhavartha Ramayana* brought the message of *Bhagawat* cult to the people with great power. Jainism too enriched Marathi in this age.

When we pass on to the third period, the most notable aspect is the contribution of Christian missionaries in Goa. Father Sephens (1549-1619) who came to India, studied Marathi language so well that he could compose charming verses in it. His *Krista purana* is considered a classic on the model of *Jnanesvari*.

The dawn of 17th century was most eventful in the political and literary history of Maharashtra. Tukaram (1608-49), the greatest saint poet of the language, contributed in such measure to devotional poetry that he is remembered with great veneration even today. A *Sudra* by birth, he wrote 3000 *abhangas*. Their appeal is timeless. He was followed by Ramadas.

Coming to the Peshwa period, Krishnadayarnava and Shridhar are the leading poets. New literary forms were successfully experimented with during the period and classical styles were revived, especially the *Mahakavya* and *Prabandha* forms. A period of transition followed in the first half of the 19th century. In 1818 Maharashtra lost its freedom to the British. Keshavsut, the father of modern Marathi poetry, published his first poem in 1885. The years in between witnessed a great change in the literary scene. In fact, modern Marathi literature took shape during this period.

As in other Indian languages, the Christian missionaries played an important role in the production of scientific dictionaries and grammars. Periodicals slowly became popular, starting with *Digdarsan* in 1840. About the same time *Darpan*, the daily newspaper, also came into being. Modern Marathi prose flourished through various new literary forms like the essay, the biography, the novel, the short story, the prose drama, etc.

Chiplunkar's *Nibandhamala* (essays), N.C. Kelkar's biographical writings, the novels of Hari Narayanan Apte, Phadke and V.S. Khandekar, and plays of Mama Warerkar and Kirloskar are particularly worth noting. Apte's novel *Pan Lakshat Kon Gheto* which deals with the poignant experience of a child-widow has been translated into many Indian languages.

Similarly Khandekar's *Yayati* which has won for him the Jnanpith Award is a very noteworthy novel. Vijay Tendulkar and C.T. Dhanolkar have written and produced a good number of plays which have earned a reputation beyond the borders of Maharashtra during the last quarter of a century. B.S. Mardhekar wrote the first 'stream of consiousness' novel in Marathi viz. *Ratricha Diwas* (1942) and it was a great success. *Ratha Chakra* (chariot wheel, 1962) by S.N. Pendse explores the relationship between physical environment and mental life. The Marathi stage had a rejuvenation after 1945.

Generally speaking Marathi has a flourishing contemporary lliterature in every branch of verse and prose.

NEPALI

The Nepali language belongs to the Indo Aryan family. It has descended from the Khas prakrit. Nepali is fairly rich in folk literature. Its traditional poetry has come to shape only in the 18th century. Subananda Das was one of the recognised poets of the early period. He was followed by Shakti Ballav Aryal and Udayanand Aryal.

Most of the writers of this period were well-versed in Sanskrit and hence Sanskrit patterns were approved for Nepali compositions. *Gopika Stuti* and *Srimad Bhagawat* were translated into Nepali. Basant Sharma's *Krishna Charita* is regarded as the first *khandakavya*. Bhanubhakta translated *Adhyatma Ramayanam* into Nepali (1841-68). Motiram Bhatta, Lekhnath and Balakrishna Sama are important poets of the modern period.

In Drama, Novel and Short Story, Nepali has claims for sizeable contributions. Among the playwrights the more important names are S.B. Aryal and Balakrishna Sama, and among novelists Pratiman Lama, Rudraraj Pandey and Shiva Kumar Rai. Parasmani Pradhan is a good prose writer and researcher.

ORIYA

Of all the north Indian languages, Oriya happens to be the least affected by Perso-Arabic influence and is nearest to the original Sanskrit. However, its literature sprouted in the language of the people expressing their dreams, thoughts and experiences. Though some scholars trace the origin of Oriya literature to the 9th cent. A.D., the language flows into a a regular stream of poetry only by the 13th century. In the initial four hundred years, we notice a reflection of different religious faiths, Buddhism, Saivism, Shaktism and Vaishnavism (with twin branches of Rama cult and Krishna cult). We also find a considerable amount of folk literature.

Sarala Das of the 14th century is the Vysa of Orissa. Strangely enough, this semi-literate kisan became a leading poet of the language. His real name was Sidheswar Parida, but he adopted the name as he considered himself the Das (servant) of the deity, Sarala Devi. The quality and fervour of his devotion is exemplified in the manner in which he has adapted the *Mahabharata*. His *Vilanka Ramayan* and *Chandipurana* are also well known. Sarala Das is followed by a group of scholar-poets who deliberately eschewed Sanskrit and wrote in simple Oriya to serve the masses. They are Balarama Das (Oriya *Ramayana* and *Mahabharata*) Jagannatha Das (*Bhagabata Purana*), Anant Das, Yosowant Das and Achyutanand Das.

The brightest star o modern Oriya literature is Fakir Mohan Senapathi. He was a poet, novelist, administrator, socia reformer, printer businessman an patriot, all rolle into one.

About the end of the 15th century and the beginning of the 16th, the influence of Chaitanya and Jayadeva was dominant on Oriya literature. This continued in different ways for about three centuries. The philosophy of Chaitanya and the poetry of Jayadeva changed the pattern of versification in Oriya. Upendra Bhanja is the most outstanding poet of this new emphasis. For erotic description and play of words, Upendra is specially noted.

Vaishnavism propagated by the Chaitanya school produced welcome results in literature. The lyrical poet Baladeva Rath, Dina Krushna Das and Bhaktacharan Das are other outstanding poets. Later in period of time we may remember the lyrical singer Gopal Krishna and the blind poet Bhima Bhoi.

Prose was practically born in the British Period, and it developed with amazing rapidity. Poetry found new ways of expression, and new themes covering political, social and patriotic sentiments were handled by poets, novelists and playwrights. In modern Oriya literature, the brightest star is Fakir Mohan Senapati (1843-1918). He was poet, novelist, administrator, social reformer, printer, businessman and patriot, all rolled into one. Strange to say, he had only two year's formal education.

He undertook literal translation of the *Ramayana* and the *Mahabharata* into Oriya. His Collection of stories and a novel *Chaman Atha Guntha* are particularly well known. This novel is a masterpiece of realistic fiction, depicting the victimization of innocent weavers. Next to Senapathi comes poet Radhanath whose magnum opus is the epic *Mahayatra*, written in blank verse on Miltonic lines. Other distinguished poets of the modern period are Gopabandhu Das, Baikunthanath Patnaik, Kalindicharan Panigrahi, Mayadhar Mansinha and Guruprasad Mohanty. Kalindicharan Panigrahi's *Matira Manisa* and Gopinath Mohanty's *Amritara Santan* (Sons of Nectar) have been translated into other languages. Mohanty has specialized in dealing with tribal life. His *Mati Matala* (The Fertile Soil, 1964) has won the Jnanpith Award. Among the outstanding playwrights we may mention the names of Manoranjan Das, Bijaya Kumar Mishra and Biswijit Das.

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PUNJABI

Punjabi emerged as an independent language in the 11th century from the Sauraseni Apabhramsa, according to many scholars, though Paisachi also has contributed to its development in the modern form. The rise of present day Punjabi has been parallel with the formation of the Gurmukhi script, evolved by the Sikh gurus.

Punjabi literature was the natural successor to Vedic and Arabic-Persian literatures and *Apabhramsa* literature which contained dramas, stories and narrative poems. Punjabi poetry dates back to the beginning of the 13th century when Baba Farid composed his *Sloks* and hymns. Though he was a Muslim mystic, he adopted the Indian literary tradition. Guru Nanak Period in Punjabi history was, in a way, a period of literary renaissance.

The literature of pre-Nanak period can be linked to the tradition of the 'Gorakpanthis' who composed *sloks* and *padas*. Another poetic genre which was popular then is called *Var*, which sings the praise of great warriors and kings. Amir Khusrau (1253-1325) has composed a *Var* on Tuglak Shah.

The golden period of Punjabi literature extends from the birth of Guru Nanak (1469) to the passing away of Guru Gobind Singh (1708). Most of the religious and mystic poetry of this period is preserved in the *Adi Granth* (the first book), a great anthology of *Bhakti* poems, which is considered a sacred scripture by the Sikhs. In it, a major portion of poetry is arranged in different *ragas* and is thus meant to be sung.

The tradition of *Sufi* and *Qissa* poetry had its influence on Punjabi poetry. Bulhe Shah and Waris Shah composed exquisite verses in the above genres. The best in Sanskrit literature was also imbibed through translation spread over 200 years (1600 to 1800) covering the two epics, the *Ramayana* and the *Mahabharata* as also *Bhagavat Gita* and *Upanishads*.

When we come to the modern age (1850-onwards) we have to remember first the contributions of Attar Singh. The Ludhiana Christan Mission brought out a translation of the Bible in Punjabi in 1852, and a dictionary of Punjabi language in 1854. The Punjabi paper *Khalsa Samachar* was started from Amristar.

A very important personality of Punjabi renaissance is Bhai Vir Singh (1872-1957). His religious epics, lyrics and nature poetry show clear signs of western influence. He is the harbinger of modernity in Punjabi literature. Puran Singh and Kripa Singh are his distinguished contemporaries. The leading poets of nationalism in Punjabi are Gurmukh Singh Musafir (1899-1976) and Hira Singh Dard (1889-1964). We have also literature of the progressive trend in ample measure both in poetry and prose. Among the outstanding modern poets mention may be made of Mohan Singh (1905-78), Amrita Pritam (b. 1919) and Harbhajan Singh (b. 1920).

Amrita Pritam has won the Jnanpith Award. Gurubaksh Singh Preet Lari, Harcharan Singh, Sant Singh Sekhom and Gurdial Singh Khosla among, playwrights, Bhai Vir Singh, Nanak Singh, S.S. Narula, K.S. Duggal and Amrita Pritam among fiction writers are noteworthy names in Punjabi. There were interesting experiments in intellectual and aesthetic poetry, the former being represented by Pritam Singh Safeer and the latter by Harbhajan Singh. Prabhjot Kaur was Punjab's state poet for many years.

The two major epics in Sanskrit, the Mahabharata of Vyasa and the Ramayana of Valmiki are outstanding creations of the Indian poetical genius.

RAJASTANI

Rajasthani is an Indo-Aryan language having its roots in Vedic Sanskrit and Sauraseni Prakrit. Its script is Devanagari. It has a fund of folk literature consisting of ballads, songs, proverbs, folk tales and panegyrics.

Historians have divided traditional poetry into two periods: the early period starting from 1050 A.D. and ending with 1450 and the second (medieval) period from 1450 to 1850. Thereafter it is modern poetry. That early period abounds in Jain poetry. The richest period for poetry and prose compositions is the next period.

All the masterpieces of traditional poetry are products of this period. Besides a great many full-length poetic works dealing with wars mythological events and devotional themes, several *Duhas* and *Gitas* (a kind of metre) have been composed on all kinds of subjects. Padmanabha, Vihu Sujo, Aluj are a few of the important composers of the period.

Modern poetry starts from the forties of this century. This reflects the impact of western culture. The first book of modern poetry *Badli* (Cloud) by Chandra Singh (b. 1912). describes the joys and sorrows of rain in th desert. N. R. Sanskarta, N. S. Bhatti, R. Kalp and G. L. Vyas are important modern poet

Mention may also be made of Vijaja Da Detha and Rewat Dan Charan whose contri bution to modern Rajasthani literature is co siderable.

Drama and novel have not flourished we in Rajasthan; but short stories (known as *va* are many and of a high standard. M. D. Vya pioneered the modern short story with hi *Varasganth* (The Birth Day, 1956).

SANSKRIT

The beginnings of Sanskrit literature ma be traced back to Rigvedic poetry (150 1200 B.C.) which can be regarded as relig ious in character only in the widest sense c the term. Rigvedic poetry contains all th aspects which are found in a *kavya* by way c themes and style. The Vedas comprise sacre hymns, sacrificial formulae and quite a fe hymns which are of secular character.

Literature produced in the periods tha followed was more and more interested i ritual, religion and philosophy. Yet in the *Brahmanas, Aranyakas* and in the *Upanishads* there occur passages which are remarkable for their literary beauty.

Then there was a period commencing with the age of Panini (5th cent. B.C.) when books on ancillary sciences or vedangas were written. e.g. Panini's *Ashtadhyayi*, Pingala's work on metres etc. In the third period of Sanskrit poetry known as the Classical period we have the epics, *Mahakavyas*, *Puranas, Narrative Poems, Prasasti Kavyas* (adulatory poems) and *Sandesha Kavyas* (message poems). The two major epics, the *Mahabharata* of Vyasa and the *Ramayana* of Valmiki are outstanding creations of the Indian poetical genius. They have considerably influenced the life, culture and literature of India.

The theme of the *Mahabharata* (the biggest epic in the world) is the battle between the Kauravas and the Pandavas on the plains of Kurukshetra (100 BC). The *Bhagavadgita* is one of the many episodes in this epic. The *Ramayana* deals with the adventures of Ram in 24,000 couplets. *Brihatkathamanjiri* of Kshemendra and *Kathasaritsagara* of Somadeva are important *Katha* literature. *Panchatantra* is the oldest collection of fables in Sanskrit (4th cent. A.D.).

The *Mahakavyas* which according to accepted canons should contain majestic descriptions of war, nature and political intrigues are the pride of Sanskrit literature. Asvaghosha's *Buddhacharita* and *Saundarananda* are Buddhist *Mahakavyas*, *Kumarasambhava* of Kalidasa deals with the puranic story of the marriage of Parvati and Siva and the birth of Skanda. The poem opens with a scintillating description of the Himalayas.

Raghuvamsa is another *Mahakavya* of Kalidasa where the poet is seen at his best. The later poets were guided more by the form than by the spirit behind the form. However, the greater among them are Bharavi (c. 600). Bhatti (7th century), Kumaradasa and Magha (c. 700).

Among the message poems it is *Meghaduta* by Kalidasa that has set the pattern. Of the other fifty message poems, the more well known are *Sukasandesa*, *Chatakasandesa* and *Hamsasandesa*. The *Harshacharita* and *Kadambari* (Bana) are justly regarded as the crowning achievements of Sanskrit prose fiction.

Sanskrit drama has a long history tracing back to Asvaghosha (2nd century A.D.). Only fragments of his three plays are available. A century later we have Bhasa who is ascribed to have written 13 plays (discovered in Trivandrum). The conventions of Sanskrit drama are all observed by Bhasa. Kalidasa is the author of three outstanding plays *Malavikagnimitra, Abhijnanasakuntala* and *Vikramorvasiya*. His treatment of the Sakuntala story in particular reveals him as a master of the dramatic art superior to all others in portraying the emotion of love. Sudraka is another important dramatist whose *Mrichcha katika* is well known. Of their successors in this literary form the more important are Visakhadatta, Harsha, Bhavabhuthi, Krishnamisra, Rajasekhara and Bodhayana.

There is also an abundance of philosophical and technical literature in Sanskrit. Of these 'Vedanta' was to exert the most profound effect culminating in the writings of Sankara (A.D. 800) leading to further interpretation of Ramanuja and Madhava. In the sphere of domestic and social conduct there evolved a body of literature known as dharmasastra.

As regards politics and statecraft Kautilya's *Arthasastra* is well known. Equally known are the mathematical treatises of Aryabhata and Bhaskara and the medical books *Charakasamhita* and *Susruta*.

The Indian tradition of *Kavyasastra* and applied literary criticism is by and large the Sanskrit tradition which almost all the modern Indian languages have adopted.

The great stalwarts Bharata, Dandin, Vamana, Anandavardhana, Kuntaka and Abhinavagupta—all belong to the period covering the dark ages of Europe. These theoreticians gave us valuable concepts like *rasa, guna, riti, vakrokti, dhwani, rasadhwani* and *auchitya*. Bharata's *Natyasastra* is the earliest treatise available on the subject.

Sanskrit continued to be a vehicle of literary expression even in the modern period, though it was less prolific not being a language of the ordinary peope. *Mahakavyas* were composed on the Buddha, Christ, Sankaracharya and Narayana guru. There were also long poems on Mahatma Gandhi, Rajendra Prasad, Tagore, Jayadeva and Jawaharlal Nehru. Quite a few books have been translated from languages like Tamil, Telugu, Malayalam etc, into Sanskrit.

The Indian tradition of 'Kavya Sastra' and applied literary criticism is by and large the Sanskrit tradition which almost all the modern Indian languages have adopted.

Influenced by the languages of the West and by the active modern Indian tongues, Sanskrit writers have written poems, biographies, novels and short stories in the contemporary period. Both in quality and quantity they may not compare favourably with similar writings in other Indian languages. But the Sanskrit Muse is kept alive by lovers of the language.

SINDHI

The origin and ancestry of the Sindhi language are disputed by scholars even today.

Many scholars hold the view that Sindhi belongs to the ancient languages of the Indus valley prior to the period of Sanskrit. Even in the matter of script, there has been considerable change. The new Perso-Arabic script was approved only in 1853.

The early poetry in Sindhi was based on local romantic tales. The early poems called Gahun were not recorded but handed down by word of mouth. Pir Sadruddin (1290-1409), an Islamic missionary, is considered the pioneer of Sindhi religious poetry.

The first great Sufi poet is Qazi Qazan (c. 1465-1551). His seven verses have been preserved. He was influenced by Bhakti Kavya movement of North India. Second only to Qazan is Shah Karim (1637-1623) whose verses are imbued with mystic thought.

What is important to note in the early Sindhi poetry is the fusion of the Islamic and Hindu thoughts and beliefs. Along with Qazan another major poet Miyun Shah Inat (1625-1713) has composed poems in the classical idiom, yet heralding a new era in Sindhi poetry.

The premier poet of Sindhi, however, is Shah Abdul Latif Bhitai (1689-1752). His collection of poems titled *Rasalo* (Message, 1866) is an expression of high thoughts with great artistry. He provides a varied fare in his poems. We have also other important poets like Rohal (1734-1804), Chainrai Sami and Dalpat (1769-1841) who were Vedantists and others who wrote religious poetry of Hindus and Christians.

Mirza Qalich Beg was the most prolific and versatile writer Sind has produced. He has about 350 titles to his credit. His 'Zinat' is the first Sindhi novel of merit. 'Zinat' is the heroine's name.

Coming to modern times, we have poets who followed the Persian poetical forms like *ghazals, qasidas, rubais* and *mathnavis.*

Among them the most important are Gul Mohamad Gul, Muhammad Qasim, Muhammad Fazil Shah, Hafiz Hamid and Mirza Qalich Beg. Freedom movement came to Sindh soon after the partition of Bengal. Lalchand Amardinomal was the champion of the national movement among the writers. Poets and prose writers gave expression to nationalism and progressivism as in other Indian languages.

Mirza Qalich Beg (1853-1929) was the most prolific and versatile writer Sind has produced. He has about 350 titles to his credit, originals and translations. His *Zinat* (Heroine's name, 1890) is the first Sindhi novel of merit. Other important novelists are Lalchand Amardinomal, Bherumal Meharchand, Ram Panjwani, Gobind Malhi, L. H. Ajwani and Krishin Khatwani.

While Bengal and Punjab retained some of their parts in India, after partition, the whole of Sindh was lost to Pakistan. The Sindhis in India now live in various parts of India and this is handicap for their literary progress. However, the Sindhis are doing fairly well in the literature of contemporary India.

TAMIL

Tamil language has the special claim of being at once classical like Sanskrit, Greek or Latin, and vigorous and modern like the modern Indian languages. Its history can be traced back to the age of *Tolkappiyam* the earliest extant Tamil grammar generally ascribed to 500 B.C. Among the Dravidian languages it is least influenced by Sanskrit, though there is a certain degree of influence.

The earliest extant literature of the Tamils is called Sangam literature and it is dated between 500 B.C. and 200 A.D. Though a considerable part of the early poetry has been lost, some of the bards and patrons decided to preserve a part of it in certain anthologies (about 4th century A.D.). These are the Ten Idylls (*Patirruppattu*) and the Eight Anthologies *(Ettuttohai*). Four hundred and seventy three poets, of whom thirty are women, have been identified. These are mainly classified into two. *Akam* or esoteric dealing with love and *Puram* or exoteric dealing with war.

In this period, Tamil literature was considerably bound by literary conventions. The poets were keen on keeping up the tradition. The land was treated as five regions viz. mountains, forests, fields, coasts and deserts and the theme of love in five aspects viz. union, patience, sulking, wailing and separation. The poet dealing with a certain aspect of love restricted himself to a particular region, season, hour, flora and fauna. These literary conventions are explained in *Tolkappiyam.*

Purananuru is 400 verses on *Puram*

themes. It serves as a window on the Tamil people 2000 years ago. *Agananuru* is 400 poems on love themes. The length of these poems varies from 13 to 37 lines. There are other collections like *Natrinai, Kuruntogai, Ain-kurunuru, Paripadal,* etc. which are quite well known.

Tiruvalluvar's *Tirukkural* is acclaimed to be the greatest Tamil classic. It expresses the most profound thoughts on the many problems of life. Each verse is a couplet composed with great economy of words. The book is divided into 133 chapters each containing 10 verses. The chapters are arranged in three books dealing with virtue, wealth and pleasure.

Round about the 3rd century A.D., Tamil produced two epics *Silappadhikaram* and *Manimekhalai* which are considered twin epics like the *Ramayana* and *Mahabharata.* The author of *Silappadhikaram* was the son of a Chera King Ilango Adikal. The title means the "Story of the Anklet" and the epic describes the moving story of Kannagi.

Manimekhalai is the daughter of Madhavi and Kovalan, the hero of *Silappadhikaram.* *Kamba Ramayanam* is an immortal classic in Tamil. Though Kambar based his work on the Sanskrit *Ramayana* of Valmiki, his rendering shows that he was a supreme artist. It is different in plot, in construction and in the delineation of character. *Kambaramayanam* runs to 10,368 verses.

Tamil is rich in devotional literature. Nayanmars are the exponents of Saivism and Alwars that of Vaishnavism. Thiru Jnanasambandar, Thirunanukkarasar, Sundarar and Manikkavacakar are the four great Nayanmars. The great Alwars are 12 in number. Kulasekhara Alwar and Andal are specially remembered. There are 5 major *kavyams* and 5 minor *kavyams* in Tamil. Jain and Buddhist works are in abundance in the language.

Coming to the period between 13th & 18th centuries, we notice Muslim and Christian impact on Tamil literature. Umaruppulavar has composed a long poem of 5000 verses on the life of prophet Muhammed. The Christian influence began with the Portuguese and continued with the Danes, the Dutch, the French and the British. Beschi, Caldwell, Winslow and Pope have made significant contributions to Tamil. The Italian priest Beschi (1680-1747) composed the magnificent poetical work *Tembavani* (The Insatiable Beauty) on the life of St. Joseph. Vedanayagam Pillai and Krishna Pillai are two other Christian poets.

Twentieth century has produced many talented men of letters in various fields, Poetry, Prose, Drama, Novel, Biography, Short Story etc. Dr. Swaminatha Iyer unearthed many literary works and edited them. Swami Vadachalam, Thiru V. Kalyanasundera Mudaliar and V. O. Chidambaram Pillai are great writers of the modern period. However, the greatest poet of modern Tamil is Subramania Bharati whose patriotic poems have inspired thousands of readers in his time. Personal freedom, national liberty and the fundamental equality of all men find eloquent expression in his verses. In some of his poems like *Kuyilpattu* (Song of the Cuckoo) *Kannanpattu* (Poems on Lord Krishna) or *Panchali Sapatham* (The Vow of Panchali) we notice a religious perception at work.

Rajam Ayyar, Madhavayya, Pudumaipithan, Ku-pa, Rajagopalan and Kalki Krishnamoorthy have contributed much to the field of Tamil fiction. These writers along with Bharati ushered in the new epoch of renaissance in Tamil literature.

Subramania Bharati is the greatest poet of modern Tamil. His patriotic poems have inspired thousands of readers in his time. Personal freedom, national liberty and fundamental equality are his themes.

In the post-Independence period several writers have come to the fore. Among poets, the names of Kulothungan, Ka-Na Subramanyam and C. S. Chellappa may be mentioned. And in fiction the outstanding names are Akilan, Jayakanthan, Neela Padmanabhan, Sundararamaswamy, Ashokamitran and Indira Parthasarathy.

TELUGU

Among the Dravidian languages, Telugu exhibits the greatest influence of Sanskrit. Telugu literature is generally divided into six periods. 1. The Pre-Nannaya period (upto 1020 A.D.) 2. The Age of the Puranas (1020-1400). 3. The Age of Srinatha (1400-1510).

4. The Age of the Prabandhas (1510-1600). 5. The Southern period (1600-1820) and 6. The Modern Period. (After 1820).

In the earliest period there are only inscriptions from 575 A.D. onwards. Nannaya's (1022-1063) translation of the Sanskrit *Mahabharata* into Telugu is the first piece of Telugu literature as yet discovered: The diction is so masterly that historians think that there must have been earlier works in Telugu. After the death of Nannaya there was a kind of social and religious revolution in the Telugu country.

Virasaivism propagated *bhakti* towards Siva as the only means of attaining salvation. Tikkana (13th cent.) and Yerrana (14th cent.) continued the translation of the *Mahabharata* started by Nannaya. *Yerrana* was also a devotee of Siva. Quite a few poets continued writing in Telugu and we come to the age of Srinatha.

The father of modern Telugu literature is K. Veeresalingam Pantulu who wrote a novel 'Rajashekhara Charithamu', inspired by the 'Vicar of Wakefield'. His goal was to erradicate social evils.

During this period some Telugu poets translated Sanskrit poems and dramas while others attempted original narrative poems. The popular Telugu literary form called the *Prabandha* evolved during this period. Srinatha (1365-1441) is the foremost poet who popularised this style of composition (a story in verse having a tight metrical scheme). Srinatha's *Naishadham* is particularly well known.

We may also refer to the *Ramayana* poets. The earliest *Ramayana* in Telugu is generally known as *Ranganatha Ramayana* though authored by Gona Buddha Reddi. Then there are the great religious poets like Potana (1450-1510), Jakkana (second half of 14th century) and Gaurana (first half of 15th century).

The golden period of Telugu literature is the 16th and 17th centuries. Krishnadevaraya's *Amuktamalayada* is regarded as a Mahakavya. Peddana's Manucharita is another outstanding Mahakavya. Telugu literature flourished in the south in areas like Madurai, Thanjavoor, etc. and that is why the age itself is called the 'Southern Period'. We find a comparatively larger number of poets among the rulers, women and non-Brahmans. They popularised the *desi* metres.

With the conquest of Deccan by the Mughals, there was a period of decadence (1750-1850) in literature. Then emerged a period of transition (1850-1910) following a long period of Renaissance. European savants like C. P. Brown played an important role in the development of Telugu language and literature. In common with the rest of India, Telugu literature of this period was increasingly influenced by European forms like the novel, the short story, the prose drama, belles letters, etc.

The father of modern Telugu literature is K. Veeresalingam Pantulu (1848-1919) who wrote a novel, *Rajasekhara Charitamu* inspired by the *Vicar of Wakefield*. He was the first person in modern times to use literature to eradicate social evils. He was followed by Rayaprolu Subba Rao, Gurajada Appa Rao, Viswanatha Satyanarayana, Katuri Venkateswara Rao, Joshua, Devulappalli Venkata Krishna Sastri, Sri Sri, Puttapparthy Narayana Charlu, and others in the sphere of poetry. Viswanath Satyanarayana has won the coveted Jnanpith Award. *Kanyasulkam* (Bride-Money) the first social play in Telugu by Gurajada Appa Rao was a thumping success. We also find the progressive movement, free verse movement and the *Digambara* style finding expression in Telugu verse. The well known modern Telugu novelists are Unnava Lakshminarayana (of *Malappalli* fame), Viswanatha Satyanarayana (*Veyipadagalu*), Kutumba Rao and Buchi Babu. Telugu is specially known for its daring experiments in the field of poetry and drama.

URDU

The grammatical structure of Urdu is based on Western Sauraseni Apabhramsa but its vocabulary, idioms and literary traditions drew heavily from Central Asian, Turkish, and Persian sources. The literary flowering of Urdu does not go farther than the 13th century. Urdu literature developed in the bazaar, the monastery and the *salons*, and all these places had their own characteristic features.

Traditional Urdu poetry comprises a few literary genres that have a definite history

Indian Writers In English

Though foreign in its origin, English has been adopted in India as a language of education and literary expression besides being an important medium of communication on a vast scale. Its history in India commences with Ram Mohan Roy's (1774-1833) campaign for introduction of scientific education in India through the English medium. He could use the English language effectively though he learnt it only after he was 16 years of age. But when Vivekananda spoke and wrote in English, Americans described him as a 'perfect master of the English language'.

Among those whose writings in prose are considered as literature the name of Jawaharlal Nehru (1889-1964) stands out. He is particularly remembered for his Glimpses of World History, Discovery of India and An Autobiography (1936). Gandhiji is reported to have cultivated English carefully and prayerfully. The language became a sharp and strong instrument in his hands. His precision, economy and clarity in the use of English is unequalled. Nirad Choudhuri (b. 1897) is an internationally accepted writer of English. His Autobiography of an Unknown Indian (1951) is particularly well known.

We have the extraordinary girl Toru Dutt (1855-76) who died at 21 leaving some fine poems; and then we have Sarojini Naidu (1879-1949) whose romanticism charmed readers in India and Europe. Her Golden Threshold (1905), The Broken Wing (1917), and the Sceptered Flute (1946) are well known. Aurobindo (1872-1950) who had his education in Cambridge mastered not only English, Greek and Latin but also French and Italian. No doubt he had his grounding in Bengali and Sanskrit. He was poet, philosopher and sage. For him poetry was a mode of mediation, a dhyanamantra. His epic, Savitri, is outstanding. His Life Divine (2 vols) is equally outstanding from another angle. Tagore has written poems in English also, Gitanjali in English is his own free rendering of his poems in Bengali. The lyrical quality of Gitanjali is universally accepted.

During the contemporary period, we have quite a few Indians, who write poetry in English. The more well-known among them are Dom Moraes (A Beginning), Nissim Ezekiel (The Unfurnished Man), P. Lal, A.K. Ramanujan (whose translations of Tamil classics are internationally known), Kamala Das, Arun Kolatkar and R. Parthasarathy.

In the field of Indian English novel the three senior writers who began to write in the early thirities are Mulkraj Anand, R.K. Narayan and Raja Rao. British education and mode of writing had a tremendous impact on the writings of Anand (b. 1905). His major novels Coolie (1933), Untouchable (1935), The Woman and the Cow (1960) reveal his concern for the underprivileged in India.

R.K. Narayanan has projected 'Malgudi' as the locale for most of his stories. He has a keen eye for the comic in the life around him. Swami and His Friends (1935), Bachelor of Arts (1937), The Financial Expert (1952), The Guide (1959) and Waiting for the Mahatma (1955) are his popular novels. Raja Rao (b. 1909) has written only four novels, but he has felt the pulse of India better than others. Kanthapura (1938), The Serpent and the Rope (1960) and The Cat and Shakespeare (1965) are significant achievements.

Other novelists of repute are G.V. Desani, M. Ananthanarayanan, Bhabani Bhattacharya, (who died in the U.S. in 1988), Manohar Malgonkar, Arun Joshi, Kamala Markandaya, Anita Desai, Khushwant Singh, Nayantara Sahgal and Salman Rushdie. Most of these novelists have written good short stories also. As regards drama and the essay the contribution is not substantial. Among the critics and historians of literature are K.R. Sreenivasa Iyengar, C.D. Narasimhaiah and M.K. Naik.

d development. They are the *masnavi* very couplet has a different rhyme), *ghazal* alking to the tender sex), *gasida* (a genre kin to the ode), *marsia* (elegiac poem), *ekhti* and *nazm*. The early stages of the evelopment of Urdu was a two-pronged novement. 1. The saints and mystics made a vehicle for the propagation of their unity and compromise. 2. The Hindu saints of the *Bhakti* movement under the Islamic influence encouraged the idea of oneness. The literary precedence of the South over the North can only be understood in the historical context.

Sultan Alauddin Khilji invaded the South during 1294-1311 A.D. The cultural confluence was responsible for the production of good literature in the South. The earliest known writer in Deccani Urdu is Shaikh Ganjulilm (b. 1393). The next notable figure is Khwaja Banda Nawaz (1320-1422). His Mirajul Ashiqeen is a Sufistic treatise in prose. Other *masnavi* writers are Mukimi of Bijapur and Ahmed Ajiz.

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The Persian tradition has taken root in Urdu poetry in the 17th century. Mulla Wajhi is a great literary figure of this period. His *masnavi*, Qutb Mustari (1609) and his rhyming prose allegory *Subras* (1634) are the gems of Urdu literature, produced in the Deccan. When the tradition of the *masnavi* spread to the North, the Deccani language yielded place to the Khariboli or the Rekhta or Urdu.

The *masnavi* now yielded place to the *ghazal*, which became the most popular form f Urdu poetry. Though ghazals were written y many poets like Amir Khusrao, Hashmi nd Qutb Shah, Wali was the most outstandng. He gave a new dimension to the ghazal. le was a passionate lover of beauty. Wali lso composed a few *qasidas*. Seraj (1715-3) is another distinguished composer of hazals.

Traditional Urdu poetry made considerable progress in the 18th century under the influence of what is called the Delhi School of Urdu poetry. They further standardised the diction. The more important among them are Khawja Mir Dard, Mir Hassan and Mushafi. There is also the Lucknow School of poets who made their own valuable contribution to Urdu poetry. The major poets are Shaik Imam Baksh Nasikh, Haidar Ali Atas and Ali Ausat Rask. Traditional Urdu poetry reaches its pinnacle with the verses of Ghalib.

During the last three decades of the 19th century, the activities of the Urdu writers were influenced by the towering personality of Syed Ahmed Khan (1817-98) who started the Aligarh movement inspired by Ram Mohun Roy. Many Urdu poets were influenced by Iqbal (1875-1938), a poet of patriotic passion, who adored nature. In Urdu poetry we see the romantic and progressive trends.

Urdu fiction is rich in *Dastan* (cyles of legends) mostly translated from Persian. The works of Sarshar, Nazir Ahmed and Sharar mark the beginnings of the novel. Ruswa's *Umrao Jan Ada* (1899), a novel appearing in the form of an autobiography of a dancing girl of Lucknow, has achieved international standards. Premchand, who is claimed also by Hindi is a giant among Urdu novelists. Drama also has flourished considerably in Urdu. Banarasi, Talib, Ahsan and Lucknavi are famous as playwrights. Husain Azad's anecdotal history of Urdu poetry titled *Ab-i-Hayat* has laid the foundations of modern literary criticism.

The Urdu literature has different phases in the modern period. Romanticism yielded place to progressivism as in other languages; the writers who claimed to be modernists rejected progressivism and marched forward. Imtizar Husain (b. 1925) has proved a real force in modern fiction. Other important writers of the contemporary period are Shahryar, Saqi Faruqi and Anis Nagi.

Qurratul-ain Haider, who has annexed the Jnanpith Award in 1990 is an outstanding fictionist. Her magnum opus is the novel *Aag Ka Darya* (1959) dealing with the horrors of partition.

INDIAN MUSIC AND DANCE

In music and dance India can legitimately be proud of her past, a tradition dating back to the days of the 'Vedas'.

To an extent, it is established now that Indian Music had its origin in the Vedas where it found its moorings. As centuries rolled on it developed into an integrated well-codified form. Development of music commenced with the folk idiom evolved in consonance with regional ingenuity, and slowly blossomed into classical forms. Though classical music in India differs from region to region, there is an underlying current of unity.

There are two systems of music in India, the Carnatic and the Hindustani, which are highly grammatized. These are supplemented by folk music, bhajans and kirtans.

Raga is a melodic scheme covered with certain traditional rules, at the same time leaving enough freedom for improvisation. These rules determine and define the notes of a scale for each raga, their order, and their essence which give a particular colour to the scheme. The Melakarta embracing 72 ragas governs the Carnatic scheme. Based on this structure innumerable Janya ragas (derivative ragas) have blossomed. A raga should have a minimum of four notes to ensure a personality. In the earlier years of its evolution, Hindustani music did not have a Melakarta system. Later on due to the efforts of Shri Bhatkande, a streamlining has been done.

The basic character of Indian Music is its emphasis on melody. As melody is a movement of one-tone-at-a-time it naturally becomes progressions of sound patterns in a linear fashion. As a raga is basically an incipient melodic idea, it has perforce to be elaborated to bring forth its aesthetic potentialities. As a result these formal constructions are either rhythmically bound or free. Also they assume slightly different colourings according to the genius of the masters and these are known as Gharanas or Bhanis.

The music researchers have concluded that raga, as a concept and practice, matured by the fifth century A.D. If one digs into the past, one would find that it was in the Sama Veda, the seeds of raga were sown, as this was chanted in a descending manner with full seven notes.

A degree of difference exists in the approach to raga formation in the Hindustani and Carnatic systems. The Hindustani system has got a peculiar characteristic that it constantly emphasises the Vadi and Samvadi notes in a raga; all phrasings gravitate towards this. In simple terms Vadi and Samvadi are the two pivotal notes of a raga structure like the reins of a horse. The result is that a number of ragas can be created having the same notes and syntax by altering these centres of gravity. A Carnatic raga, on the other hand, has a way of distributing tonal emphasis thereby giving greater freedom to the musician in creating patterns. Also the Gamakas or graces are characteristically different.

The Hindustani system has its broad sweeps and glides and the Carnatic its almost coiled coil technique. And finally unlike the Carnatic system, Hindustani music is based on the 'time' theory. The morning ragas, the midday ones, the dusky varieties and of course the night and mid-night, not to mention the dawn. In Carnatic music, though there are indications in this regard, in concerts this rigour is not strictly adhered to. Like derivative ragas in the South, there are the Raginis in the Hindustani idiom. There is also an element of gender in Hindustani music. Raginis sport the female gender and of course Ragas the male.

Talas are rhythmic cyles. They have a universal unity. Two plus two cannot but be four. Indian music has got the most complicated variety of tala structures in the world. And this is specially so in Carnatic music where even fractions are hamessed. In the world everything is rhythmic, even the rattle of a train. But that would be linear rhythm. Only when there is a feeling of coming back to the origin a form is ensured, though repetitive or cyclic; say, like the days of the week, Monday to Sunday and Monday again.

The fundamental units of the Indian rhythmic-structure are three (thisram) four (chathusram) five (khandam) seven (misram) and nine (sankeernam). On a closer look, it would be discernible that the last two are only mixtures of the second and third. Three+four and four+five. We may leave the vulgar fractions to the virtuosos. As talas are simple arithmetic, there cannot be any difference in the manner of their operations. But while in Hindustani music, the transit from the Vilambit stage (slow tempo) to the Dhrut (fast tempo) is without any strict sensc of temporal proportions, in Carnatic music the duration values are definite. The Dhruta is double the Madhya (middle) which in turn is twice the Vilamba.

COMPOSITIONS

Prior to Thalapakkam Annamacharya, who evolved the Krithi pattern as in vogue today—Pallavi, Anupallavi and Charanam—Carnatic music had its own system. In Tamil Nadu saint composers like Arunagiri Nadhar, Muthu Thandavar, Manikavachagar and Thayumanavar had composed devotional canticles like Thirupugazh, Thevaram and Kirtanas. As there was no system of notation obtaining then, these were learnt and mastered by the ear.

It was Purandaradasa from Karnataka who not only gave shape and form to Carnatic music by perfecting the Krithi pattern but evolving a number of musical exercises in the form of Sanili, Jandai, Dhattu and Geetam. This gave structure to the idiom. It can therefore be said that it was *Purandaradasa* who gave a launching pad to *Thyagaraja, Syama Shastri* and *Muthuswami Dikshitar* to pour forth their devotion into music. This trinity finally emerged as the greatest contributors to the enrichment of Carnatic music. Thayagaraja sang in simple Telugu in praise of Rama who was his Ishta Devata. As he had a large number of disciples by his side always his compositions easily caught on and became popular.

It was Purandaradasa who gave a aunching pad to Thyagaraja, Syama Shastri and Muthu-wami Dikshitar. his trinity finally merged as the retest contributors the enrichment of arnatic music

The unique feature of his compositions is that every song was the result of an inner inspirational urge, having for its background a personal experience or anecdote. He covered almost the entire range of ragas and more than that he covered a raga in his composition from various angles leaving very little elbow room for future composers. This must have prompted Dikshitar to adopt the Dhrupad system for doubling the pace of the stanzas in between to give a new look to his compositions Syama Shastry sang in praise of Kamakshi, the presiding deity at Kancheepuram. His compositions revealed his technical virtuosity in Carnatic music. While Thyagaraja's compositions can be learnt by listening, those of the other two in the trinity have to be learnt from a Guru.

There are also the Padams, Jhavelis and Kavadi Chindus to adorn the lighter side. The first two are the counterparts of the Thumris of the Hindustani style. They are erotic in content and have to be sung with emotion and a feeling for the lyrics.

Coming to the *Hindustani* idiom, the Dhrupad is he most ancient form of composition evolved by *Swami Haridas* and *Tansen*. The Swami lived some ime at the end of the fifteenth century. He became sanyasi belonging to the yogic lineage of the ndhra philosopher *Saint Nimbarka*. Bhakti was the eynote of his compositions. Tradition has it that *aiju Bawra* and Tansen were his disciples. Tansen as born in the earlier part of the 16th century. egend has it that he was the son of one Makarand ande, and was named Ram Tanu and was christened Tanna Misra. He adorned the court of Akbar. He is credited with the creation of new ragas such as Miyan ki Malhar, Darbari Kannada and Miyaki Thodi. This idiom had gone into oblivion for long, but has now surfaced due to the efforts of the Daggar family. It has also caught on in the West in view of the robustness of the compositions.

The word *Khayal*, of Persian origin means 'Imagination'. Though its origin is attributed to Amir Khusro to whom all untraceable things are traced, consensus of opinion is that it came into prominence due to the efforts of Sultan Mohammed Sharqui in the 15th century and became acceptable as a classical form from the time of Sadanand Nyamet Khan (18th century). Unlike the Dhrupad, it is more delicate and romantic. For in structure and technique, it has certain freedom not found in Dhrupad.

A Khayal need not start with an Aalap so necessary in a Dhrupad. It depends on the genius of the singer to beautify it, by giving each note its proper environment, gamakas and an inner sense of melodic proportion. There have been great names in this regard like Balakrishna Bua (Gwalior Gharana), Rahamat Khan (Gwalior Gharana), Natthan Khan (Agra Gharana), Fayyaz Khan (Agra Rangeela Gharana), Alladia Khan (Jaipur Gharana), Bhaskar Bua (Agra, Gwalior, Jaipur Gharanas), Abdul Karim Khan (Kirana Gharana), Abdul Walid Khan (Kiran Gharana).

The *Thumri* is a very light form often bordering on the vulgarly sensuous. It quite possibly, is associated with the Radha-Krishna Bhakti cult and harnessed in Kathak. It was very famous in the 19th century under the patronage of Wajid Ali Shah, who was interested in Bohemian pleasures. He was a generous patron whose court was adorned with dancers and music luminaries. *The Tarana* is a composition which does not use meaningful words. Its libretto is made of syllables like nadir, tome, tarana and yalali which are mnemonics of tabla and sitar strokes. Its parallel can be found in the Thillana of the Carnatic idiom.

The Ghazals, now very popular, are more famous for their erotic content. Mirza Ghalib can be called the father of this style and he did not mince words in describing its purpose. His philosophy was wine and women. It is now a commercially viable venture and draws far larger audiences than any other style of Hindustani music.

The above touches only the broad and fundamental aspects of the two main styles of Indian music.

INSTRUMENTS

The flute, nadaswaram, veena, gotuvadhyam, thavil, mridangam, and the plain drum are some of the ancient instruments of music in India. The sitar and the tabala were late comers. The sitar appears to have infiltrated from Persia and has assumed great popularity. Except the veena which is neatly fretted, all instruments are negotiated by the method of trial and error. Their handling depends on the ingenuity and dexterity of the player. The flute and the nadaswaram as also the shehnai are wind instruments; the veena, gottuvadhyam, sitar and now the sarod from Afghanistan are stringed instruments. The drum varieties are percussion instruments.

Indian instrumental music is *basically vocal* in conception. This is more pronounced in Carnatic music where the artiste reproduces only the works of great masters on the instruments. The element of licence and improvisation *occur* in the Aalap or the free prelude. But there is a slight difference. In Hindustani music, instrumental scores do not rely on musical compositions with lyrics alone.

A musical phrasing based on a given rhythmic cycle is taken up for delineation and is processed in five stages namely, Aalap (free prelude), Jhod and Jhala (chords), Gaat (the musical structure to be negotiated), the Vilambit (slow pace) and the Dhrut (fast tempo). Though there are separate musical scores for musical instruments, the emphasis is on the Gayaki Ang. That is, effort is made to be as faithful as possible to the vocal style. However, these days great maestros are trying to innovate an experiment on patterns unique to the instruments and bring out their potentialities.

Pandit Ravishankar, Ali Akbar Khan and *Amjad Ali Khan* are instances in point. Ravishankar has gone a step further and specialised in orchestration also. Not only that, he has also tried to effect a fusion between Indian and Western music. He has rubbed shoulders with the *Beatles*, the *Pop* and *Jazz* tribes. Only posterity will be able to decide the value and potentiality of this experiment. On the percussion side also there has been a lot of effort to achieve a common platform for drums of all types. *Zakir Hussein*, the young and ebullient son of the illustrious Allah Rakha has made much progress in this direction. This effort clicked, as rhythm has universal appeal and brooks no regional or international prejudices.

The violin, a totally western instrument has also been Indianised and has become popular. It was in the 19th century that the brother of Muthuswamy Dikshitar, Baluswamy Dikshitar, introduced the violin to India. Since then it has caught on and become an indispensable adjunct to Indian music. In fact, it has eclipsed all other Indian instruments, in view of its portability, negotiability and range. It does not react wildly to the vegaries of weather, like its Indian counterparts and no wonder it is the most sought after instrument, especially in the South. Why south, one may ask.

Karnatic music: a timeless tradition

In the North, the *Sarangi*, another stringed instrument, has been in vogue for centuries. But it has its inadequacies. It sports a plethora of vibrating strings which have to be returned for every change of raga in a concert. Added to this, it has to be operated by the knuckles instead of the fingertips. In the circumstances, there cannot be pin-point precision in notes in the speedier utterances. In inexpert hands, it will be an instrument of aggression. Years of practice only can enable an artiste to achieve perfection. But its beauty lies in its rich total timbre that can surpass even the voice. It can stir the heart in the Vilambit passages. So much so that in the Akashwani it is featured when any dignitary passes away. In the recent past the violin has started catching on in the north also. *V.C. Jog* and *Smt. N. Rajam* are two outstanding artistes of this instrument.

There have been great maestros of violin and there still are in the south. Starting from *Govinda Swamy Pillai*, there have been stalwarts like *Dwaram Venkataswami Naidu, Mysore T. Chowdiah, Rajamanickam Pillai* and *Mayavaram Govindaraj Pillai.* Today the younger set has achieved astounding perfection and professionalism almost eclipsing the old-timers. *Lalgudi Jayaraman, M.S. Gopala Krishnan* and *V.V. Subramaniam* are a few instances. Special mention must be made of the outstanding achievements of the young violin maestro *Prof. L. Subramaniam* who has not only mastered the Carnatic idiom but also the Hindustani and Western styles. In the last mentioned he is on par with the top rankers in the West. *Zubin Mehta*, when asked about his impressions of the Indian violinists, observed. 'Oh yes, that young lad L. Subramaniam, is tops'.

The number of Carnatic musicians is too large to admit of detailed mention. But it would be worthwhile to mention a few great names. *Palghat Rama Bhagavatar, Ariyakudi Ramanuja Ayyangar, Ma-*

hanjapuram Vishwanatha Iyer, Madurai Mani Iyer, Chembai Vaidyanatha Bhagavatar, Palghat Mani Iyer, Palani Subbudu, Dakshinamoorthy Pillai. But the sole credit for making Carnatic music popular in the West should go to *Smt. M.S. Subbulakshmi* who with her golden voice took the Western world by storm. More than that, she harnessed music as a vehicle of devotion and philanthropy. Indeed she realised the real purpose of music.

DANCE

Among the various dance forms in vogue in India are Bharatanatyam, Chakiarkoothu, Kathak, Kathakali, Krishnanattam, Kuchipudi, Manipuri, Mohiniattam, Odissi, Ottanthullal and Yakshagana. Besides, there are umpteen numbers of folkdances peculiar to various regions and sub-cultures.

Bharata Natyam is poetry in motion. Tracing its hoary origins in the Natya Shastra, written by the great sage, Bharata, it is a highly traditional and stylized dance form. Crystallized in the cast-iron mould of Bharata's technique, this art form grossily disallows new-fangled innovations or gimmicks except in repertoire and forms of presentation. Emerging far back in the labyrnthine twists of ancient history (as information for the date conscious, 4000 B.C. is the ascribed date to the Natya Shastra), Bharatanatyam has been immortalized in successive generations, as much by the sinuous grace of great dancers as by the nimble fingers of renowned sculptors who have demonstrated the perfection of Bharata's technique in the flowing lines of temple sculptures.

Bharatanatyam is poetry in motion. It is a highly traditional and stylized dance form, crystallized in the cast-iron mould of Bharata's technique that disallows new- fangled gimmicks.

Its *present* form was evolved by the Tanjore quartet namely Poniah Pillai and brothers. Earlier variedly known as Dasi Attam and Sadir, it was practised by Devadasis of the South Indian temples. It went into disrepute due to economic and social conditions and it was Rukmini Devi who gave it new life and respectability. Its format consists of Alarippu (invocation), Jathi Swaram (note combinations), Shabdam (notes and lyrics), Varnam (a combination of pure dance and abhinaya), lighter items like Padams and Javalis (all erotic) and finally the thillana (again pure dance). On par with Rukmini Devi, there was Bala Saraswati, the queen of Bharata Natyam.

Chakiarkoothu. This form is believed to have been introduced to Kerala by the early Aryan immigrants and is performed only by the members of the Chakiar caste. A highly orthodox type of entertainment, it can be staged inside temples only and witnessed by the Hindus of the higher castes. The theatre is known as Koothambalam. The story is recited in a quasi-dramatic style with emphasis on eloquent declarations with appropriately suggestive facial expressions and hand gestures. The only accompaniments are the cymbals and the drum known as the mizhavu, made of copper with a narrow mouth on which is stretched a piece of parchment.

Folk Dances of India vary according to the region and have no specific grammar. They fit in with the scheme of festivals in each region.

Kathak. It has its root in Katha—story. A band of story tellers who were attached to temples in North India, narrated stories from epics. Later, they added mime and gesture to their recitation. The next stage in its evolution came in the 15th and 16th centuries A.D. with the popularisation of the Radha-Krishna legend. With the advent of the Muslim rule, it was taken out from the temples to the courts. Jaipur, Lucknow and Benaras became the centres. While Jaipur gave predominance to pure dance with emphasis on rhythm, the Lucknow one drifted into erotics.

Benaras also stuck to pure dance but it provided for the sensuous aspect by delineating episodes from the Radha-Krishna legend. The parton king of the Lucknow style was Wajid Ali Shah who spent extravagantly on art. The place of women in Kathak was of a different order. They were known as nach-walis who adorned the courts of the Mughals. Apart from this, they were used for entertainment of the pleasure seeking rulers and their fawning toadies. Eventually they came to be categorised as women of easy virtue. The Kathak dance goes through a regular format mostly concentrating on rhythm, variously called Tatkar, Paltas, Thoras, Amad and Parans.

Binda Din Maharaj, Kalkadin, Aachan Maharaj, Gopi Krishna and Birju Maharaj are but a few maestros in this line.

Kathakali is the most refined, the most scientific and elaborately defined dance form of Kerala. As it is obtained today it is not more than 300 years old, but its roots can be traced back farther past. It is a very exciting art form demanding not only complete control of practically every fibre of the artiste's body, but also intense sensitivity of emotion.

The stories for *attakathas* (the verse text for a kathakali piece) are selected from epics and mythologies and are written in a highly sanskritised verse form in Malayalam. The actor does not speak, but expresses himself through highly complicated and scientifically ordained *mudras* and steps, closely following the text being sung from the background of the stage.

The domain of kathakali is peopled by superhumans, gods and demons, and animals who are presented in a larger than life format. What strikes the spectator first and most is the splendour of the costumes, ornaments, and facial make-up which transform the actor-dancer into a type rather than a particular character. A character can be identified by the colour it sports. A green-painted face stands for nobility, honour, valour and such higher qualities.

Mythological heroes like the Pandavas, King Nala and divine personages like Krishna and Indra wear this make-up. In characters who wear the *katti* make-up , the green on the face is broken by a red patch resembling an upward twirling moustache. This make-up is symbolic of high-born anti-heroes, who are demonic, but worthy foes to the heroes. Examples are characters like Duryodhana, Ravana and so on.

Another character classification called *tadi* (beard) includes wearers of red, white and black beards—red worn by vicious and savage villains like Dussasana, Bakasura and so on, white by the pious giant monkey Hanuman, and black worn by aboriginal hunters and forest dwellers. The category called *kari* (black) has characters whose faces are painted in lamp black, mostly ogresses like Shurpanakha and Hidimba. In complete contrast is *minukku,* in which the face is painted in delicate flesh tones with yellow and red powder. They are the noble women, queens, princesses, mostly heroines like Damayanti, Sita and others.

The vocabulary for the performer is only *hastamudras* (stylised hand gestures), facial gestures and *nritta*. Together with the exotic quality of the spectacle and the intricate *abhinaya* system and the rhetorical text rendered in classical style to the accompaniment of drums, a kathakali performance transports a spectator to an unwordly atmosphere peopled by gods, demons and other superhumans.

It takes years for a novice to graduate into an actor. Seven years of full-time practice under a meticulous teacher is the minimum called for. But to make an accomplished actor able to portray versatility, it takes many more.

Kathakali had its origins in the courts of the kings of Kerala. It is considered to be a highly synthetic art form, combining in itself the rudiments of its earlier forms like Krishnanattam and Ramanattam plus a highly scientific dance drama form. It is not folk, but highly classical, though not very old.

Most of the attakathas were written in the last century, but new attakathas are also appearing, though the standards are still kept undisturbed. There is plenty of innovation going on, yet all within the framework of the basic format. One of the noteworthy innovations was *rendering* Goethe's German classic *Faust* into an attakatha.

Poet Vallathol can be said to be the fountainhead of all inspiration in regard to today's kathakali. He authored many a script. 'Kerala Kalamandalam' at Cheruthuruthy on the bank of Bharatapuzha is the premier insitution in this regard.

Koodiyattam. This is always a long drawn out affair and may take anywhere from a few days to a number of weeks. It is both entertainment and edification. The Vidhushaka rules the roost. He moral-

ises and his armoury—satire and innuendo—has some times no relevance to the theme of the play.

Krishnanattam. It is intended for presentation on eight successive nights to unfold the entire story of Lord Krishna; the style is almost akin to Kathakali.

Kuchipudi. It is the dance drama of Andhra Pradesh. It is the corresponding style of the Bhagavata Mela Nataka of Tamil Nadu. Except that the emphasis is on the animation, the grammar is derived from the Natya Shastra and in all other aspects it is akin to Bharata Natyam.

Tirtha Narayana and Siddendra Yogi evolved this style. Kuchelapuram in Andhra Pradesh was the originating centre for this style. Hence the name Kuchipudi. It was a male prerogative. In recent years women have taken to it but it is mostly solo dance that they perform. To this extent the concept has been watered down. Like Kathakali it used to be a week-long affair. Vedantham Satyanarayana is the doyen of this style and he has carved out a niche for himself in portraying the role of the haughty, beautiful and vain-glorious Satyabhama. Vembhati China-Satyam, however, is the most popular guru today.

Kathak, which has roots in Katha, evolved out of the popularisation of Radha-Krishna legend. Jaipur, Lucknow and Benaras became centres of its practice. From dance it changed to rhythm and erotics.

Manipuri. From the 15th to the 18th centuries, Vaishnavism came to be adopted in Manipur and this ushered a new era in the development of this style. For Manipuris, dance has been so inextricably woven into their pattern of life. The dance form is mostly ritualistic. It has still preserved the dance drama technique which draws heavily from the rich lore of legend and mythology. Costumes are colourful and the music has a quaint old-world charm. The numbers presented are Lai Haraoba and Rasa Leela. The former deals with the creation of the world and the latter is on Krishna Leela.

Drums play an important part and the Poonang Cholom item is a must in any performance. The Kartar Cholom danced with cymbals is another exciting item.

Mohiniyattam is also the heir to Devadasi dance heritage like Bharatanatyam, Kuchipudi and Odissi. The word 'Mohini' literally means a maiden who exerts desire or steals the heart of the onlooker. There is the well-known story of Lord Vishnu taking on the guise of a 'Mohini' to enthral people, both in connection with the churning of the milk-ocean and with the episode of the slaying of Bhasmasura. Thus it is thought that Vaishnava devotees gave the name of Mohiniyattam to this dance form.

In format, this is similar to Bharatanatyam. The movements are graceful like Odissi and the costumes sober and attractive. It is essentially a solo dance.

The first reference to Mohiniyattam is found in 'Vyavaharamala', composed by Mazhamangalam Narayanan Nambudiri, assigned to the 16th century A.D.

In the 19th century Swathi Tirunal, the king of erstwhile Travancore, did much to encourage and stabilize this art-form. It was Poet Vallathol who again revived it and gave it a status in modern times through Kerala Kalamandalam, which he founded in 1930. Kalamandalam Kalyaniamma, the first dance teacher of Kalamandalam, was instrumental in resuscitating this ancient art form. It is slowly trying to acquire an identity and classical status.

Odissi. This is also based on the Natya Shastra and the earliest evidence, we have of the existence of the art of dance in Orissa is during the 2nd century B.C. when the Jain King Karavela ruled. Himself an expert dancer and musician, he arranged a performance of Thandava and Abhinaya.

In the early 17th century, a class of boys known as Gotipuas, came into being. They dressed as dancing girls and danced in the temples. Grace is its uniqueness and the most important elements are the Bhangis and Karanas. The Bhangis are the basic poses and the Karanas the basic danceunits.

The format consists of Bhumi Pranam, Batu, Pallavi and lighter items like the Ashtapadi ending in moksha approximating to the Thillana of the South. It has gained great popularity today and it is to the credit of Smt. Samyukta Panigrahi to have made it acquire universal appreciation. Today kelucharan Mahapatra has become a name to reckon with as a pre-eminent guru.

Ottan Thullal. It is performed solo and because of its ready mass appeal, it is also known as the poor man's Kathakali. Kunjan Nambiar evolved it and brought out the social conditions of his time, the distinctions of class and the weaknesses and whims of the rich and the great. The dialogue is in simple Malayalam and therefore ensures mass appeal.

Yaksha Gana. This belongs to Karnataka and has a rural origin. It is an admixture of dance and drama. Its heart lies in 'Gana' meaning music. It is about 400 years old. The language is Kannada and the themes are based on Hindu epics. The costumes are almost akin to the Kathakali ones and the style seems to have drawn inspiration from Kathakali. As prescribed in the Natya Shastra, it has the Suthra Dhara (conductor) and the Vidhushaka (the Jester).

INDIAN PAINTING, SCULPTURE

Despite great gaps in our knowledge of continuities in history, the story of Indian painting has to begin with the art of primitive man which has survived in rock shelters and caves in places like Hoshangabad, Mirzapur, Bhimbetka.

Stone Age paintings belonging to the Magdalenian phase (15,000 B.C.) have been discovered elsewhere. The chances are that the paintings in India do not go that far back. But it is accepted that the primitive intellect and vision can survive for long when communities are isolated. Thus these paintings share the vivid realism of primitive art that has been discovered in many places like Altamira in Spain and Lascaux in France. The silhouette effect creates a dramatic shadow-play of scenes of hunt, the open mouth of the wounded boar expresses all its pain.

The epoch of the Indus Valley Civilization (3000 B.C.–1500 B.C.) was one of elegant urban culture, but since the superstructures have not survived, no murals have come down to us. But in the case of the Aegean culture of ancient Crete we find close similarity between mural painting and the painting on pottery. The Indus epoch also may have had extensive mural painting, for the painting on the pottery that has come down to us in abundance shows maturity and range, from vigorous realism through rhythmic stylization to strikingly expressive abstraction.

The earliest paintings of Ajanta date back to the first century B.C. and the latest to the eighth century. The spirit of the compassionate Buddha is their inspiration.

Perhaps Hinayana or early Buddhism did not understand that spirit correctly, for it remembered only the transience of things, the pervasiveness of pain. But, though Siddhartha had wanted to take his infant son with him when he left the palace, he could not because the mother's hand lay protectingly over the child even in her sleep. He remembered this after his enlightenment and told all to have the same kind of protective regard for every living thing. He rejected Nirvana for himself and was bom again and again to help humanity in its travails, not only in many human roles, but as a deer, an elephant, a swan.

The Jataka tales elaborated the vicissitudes of these incamations and the Ajantan artists painted them in sinuous line and sensitive colour. City, countryside and forest, men and women of every type, fauna and flora, all are mentioned in these murals.

Since the brush and the chisel accompanied the message of peace when Buddhism radiated to the rest of Asia, Ajanta became a fountainhead of Asian painting and murals with the clear stamp of its style. This can be seen in Sigiriya in Sri Lanka, Bamiyan in Afghanistan, in many places along the old silk route in China, in Korea and in Horiyuji in Japan.

In India itself the mural tradition continued, though with less momentum, in Chalukyan Badami (sixth century), Pallava Panamalai (seventh century), Pandyan Sittannavasal (ninth century), Chola Tanjore (twelfth century), Lepakshi of Vijayanagar (sixteenth century) and the murals of Kerala of various dates reaching to the middle of the nineteenth century.

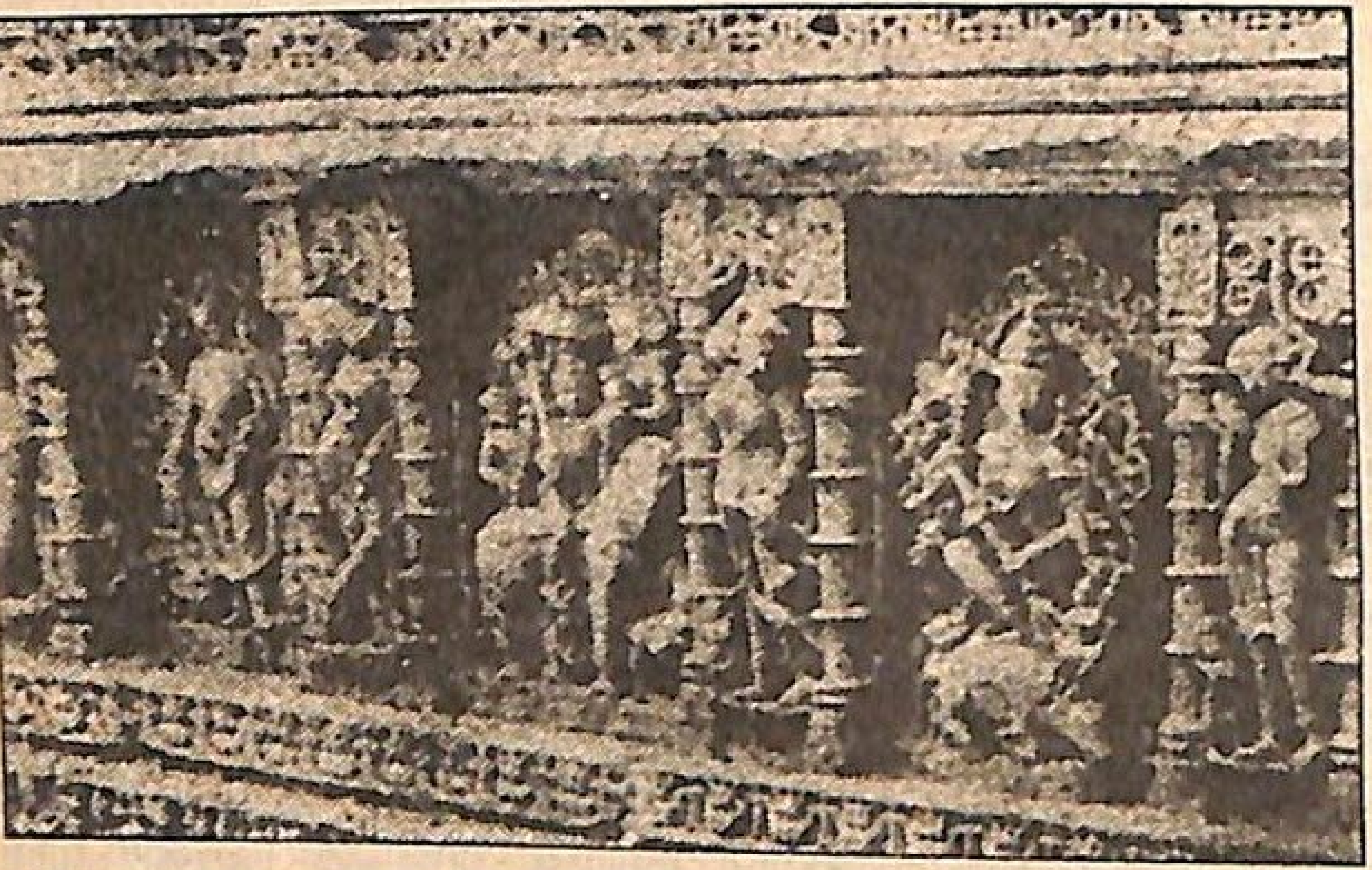
Meanwhile, painting had come down from the extended mural surface to the miniature dimension of the manuscript, originally on palm-leaf, later on paper. The miniatures of Pala period Bengal (tenth and eleventh centuries) conserve the sensuous line of Ajanta. But there is a rapid decline now and the line becomes brittle and angular.

It is this style that spread to western India and is seen in numerous illuminated manuscripts, the bulk of them being Jain texts, of the period from the twelfth to the fifteenth centuries. But a wind of change begins to blow during the latter half of the fifteenth century and the first quarter of the sixteenth.

In response to the lyricism of poems like the *Vasanta Vilasa* (Dalliance in Spring), in Bilhana's *Chaura Panchasika* (Fifty Stanzas on Stolen Love) and *Laur-Chanda* (the Romance of Lorik and Chanda), line again becomes supple, colour lustrous. The Indian miniature stabilizes a fine pictorial style even before the advent of the Moghuls.

Though the imperial court of Akbar was headed by artists from Persia, Moghul painting is not a provincial school of Persian painting. The latter retreats into a paradisiacal world of romance, while Akbar is interested in contemporaneity, in history in the making. The organization of the studio and its working also brought about a rapid indigenisation of the alien idiom.

Akbar recruited a very large number of Indian artists. Each painting was most often a co-operative effort of Indian and Persian artists, one man doing the drawing, another the colouring, a third the details. The indigenisation received further momentum when Akbar commissioned the translation and illus-



Rani-ki-Vav at Patan in Gujarat discovered in 1990

tration of Indian texts like the *Ramayana* and the *Mahabharata.*

It is mostly artists trained in the Moghul atelier who became the court painters of the Rajput princes. But while Moghul painting was elitist, reflecting imperial pomp and circumstance, Rajput painting presented in line and colour the great myths and legends of the land, the story of Rama, of Krishna, of the *Bhagavata* and the *Gita Govinda.* Of the many states in the plains of Rajasthan, two need special mention.

The style of Kotah painting anticipates by nearly eighty years the primitive vision and virility of European fauvists like Douanier Rousseau. That of Kishangarh painting manages the perfect pictorialisation of the poetry of the Radha-Krishna story.

In the small principalities of the Himalayan valleys set up by intrepid Rajput warriors from the plains, many centres came up of which Basohli is unique for its intensity of expression, Kulu for its closeness to the folk style and Kangra for both its romanticism and large output.

A decline followed the close of the Rajput phase. With the strong presence of the west in the British era, western academism became popular, mostly self-taught in the case of a pioneer like Ravi Varma, through institutional training in the case of others. The revivalist school, headed by Abanindranath Tagore, was nationalist in inspiration, but its pictorial achievement was weak and sentimental.

The four pioneers of modern painting in India are Gaganendranath Tagore who tried out every technique and style, Amrita Shergil who integrated the pictorial idiom of the west and an Indian vision, Jamini Roy who discovered the virility of the folk tradition and modulated it in many ways and Rabindranath Tagore who demanded for paintings music's autonomy and independence from factuality and thus gave a charter for free variations on naturalism, abstraction and expressionism.

SCULPTURE

The story of Indian sculpture begins with the epoch of the Indus Valley Civilization and it is already a startlingly mature achievement. The figurine of the dancing girl that has come down to us testfiles to good knowledge of bronze casting, indicates the fascination of the feminine figure that will endure throughout, points to the close relation between sculpture and dance in the Indian tradition.

Terracotta is the medium for objects used in ritual like mother goddess figurines as well as for recreation like toys of a great variety. Despite their small size stone sculpture achieves monumentalism and animals like bulls represented in the small steatite seals have a vibrant realism.

The dispersal of Persian craftsmen when the Achaemenid empire was overrun by the Greeks in the fourth century B.C. may have contributed to the monumental stylization of the figure of the lions in the Asokan pillar that has been adopted as India's national emblem. But the Mauryan age also evolved a gentler style in the bull of the Rampurva pillar and the sympathetic treatment of animals continues throughout in Indian sculpture. The Yakshas and the Yakshis (spirits of hills and trees) are at first rather rigid figures but the feminine figure soon becomes sensuously refined, even though remaining ample, in the Didarganj Yakshi.

The Sungas who replaced the Mauryas in the second century B.C. further refined the Yakshi figure with elaborately carved costume and jewellery, linked tree and woman through the nexus of fertility which symbolism was poetically brought out in the compositions and developed the skill for fluent narration in running friezes of low-relief or deep-relief sculpture.

The Satavahanas (second century B.C. to second century A.D.) further developed these traditions. The dryads of Sanchi are the most lissome representations of the type. Narrative sculpture at Amaravati brilliantly solved the problem of composition in awkward shapes like that of the medallion.

In the north-west regions, now no longer in India, in the Indo-Greek kingdoms that emerged in the wake of the invasion under Alexander, the plastic vision of ancient Europe combined with Buddhist spirituality to create the art of Gandhara. This region became part of the vast Kushan empire of Kanishka (second century A.D.) which stretched from the Oxus to the Ganges. But the Kushans mostly resided at Mathura and the art of this epoch was in the main a prolongation of the earlier traditions.

However, it was an age of highly urbanised and relaxed mores and the Yakshi figure lost its links with the woods, became a self-consciously seductive damsel of the city. Scenes of revelry with the wine flowing freely are represented in sculpture. Feminine apparel begins its fine adventure of ambivalence, revealing while pretending to conceal, for the Mathura nymph wears so transparent a fabric that she appears nude.

The age of the imperial Guptas (300-600) achieved the classic stabilization of the icon of the Buddha, represented as seated or standing, and with various symbolic gestures of the hands. The circular medallion that had decorated the railings in Sungan and Kushan times evolves here to the splendid aureole or halo of the Buddha. The transparent apparel of the Kushan epoch falls here in fine folds that trace flowing rhythmic patterns all over the figure. The visage with its delicacy of moulding achieves a rapt serenity of expression, a quality of inward musing, realised never before.

The Gupta creation of the classical icon of the Buddha is a landmark in the art of Asia for, like the Padmapani of Ajanta, it radiated to many lands. This age also created magnificent sculpture on Hindu themes like the incarnations of Vishnu in the late fifth century temple of Deogarh and the powerful representation of the boar (Varsha) incarnation salvaging the earth, hewdn from the rock at Udayagiri.

The Vakatakas of the Deccan were the contemporaries of the Guptas and under their patronage fine sculpture came up in abundance, mostly Buddhist at Ajanta, Hindu at Ellora. The achievement has great range, from the lightness of flying figures and the elegant rhythmic balance of dancing groups such as the one at Aurangabad to the majesty and wealth of symbolic meaning of the figure Mahesa at Elephanta.

The Western Chalukyas continued these trends, creating floating figures and dancing Sivas at Badami, Aihole and Pattadakkal. The Eastern Chalukyas also created some fine sculptures of dance in the temples of Vijayawada region.

In the eighth century, the Rashtrakutas carved a whole hill of rock at Ellora to simulate a structural temple and peopled it with sculpture on the exploits of Siva which share the turbulent power of their unique architectural achievement. The Gujara-Pratiharas who were their contemporaries evolved a less turbulent though still monumental style in such creations as the cosmic form of Vishnu, created poetically sensitive sculptures like the one showing the wedding of Siva and Parvati and contributed one of the loveliest dryads in the Indian tradition.

The Gahadvalas continued this tradition and the twelfth-century head from Rajorgarh is probably the best Indian sculpture for the most elegant representation of feminine coiffure. This trend of exquisite feminine figuration climaxed in the epoch of the Chandellas (tenth to twelfth centuries). The eroticism of Khajuraho sculptures has unfortunately attracted undue attention all over the world.

But far more sensitive in modelling and poetic in sensibility are the representations of woman in her various moods of longing, expectation, reverie. Eroticism is found in the sculptures of Konarak and Bhuvaneshwar of the epoch of the Eastern Gangas (thirteenth century) too. But here again the poetic and romantic figurations of women are more sensitive.

Moving further south, the great achievement of the Pallavas (eighth century) was the gigantic tableau at Mahabalipuram where a whole rock face has been carved into a representation of the descent of the Ganges and the teeming animal and human life on its banks. There are some exceptionally fine and deeply sympathetic studies of animal life here.

Siva is the towering figure in Chola sculpture (eleventh and twelfth centuries) in stone besides bronze. But it is the work in bronze, especially the Nataraja or dancing Siva, that has become world famous, and deservedly so. Matching profound concept with perfect plastic form, this great iconic creation sees the incessant change of the world, the gyration of the electron as well as the galaxy, as ordered process, assures man that it is a benign order.

Terracotta is the medium for objects used in rituals like mother goddess figurines as well as for recreation like toys of a great variety. Despite their small size, stone sculpture achieves monumentalism.

Under the Hoysalas (twelfth century) the Karnataka region created a sculpture where the soft chloristic schist used attempted rather excessive detail and ornamentation. In the sixteenth century, Vijayanagar favoured a sculpture that reflected imperial pomp in elephant processions, cavalcades, marching solidiery.

Stone sculpture influenced by the Pallava tradition and bronzes influenced by the Chola style were produced in Kerala, but its unique achievement is in sculpture in wood.

Exposed to stimuli from all over the world, Indian sculptors today are experimenting in all styles, using new materials like steel and aluminium, fibreglass and even fibre. But the most significant trend seems to be the one which seeks to recover the iconic quality, the power to stir the impulses of awe and adoration which are humanistically the most valuable strains of the Indian sculptural heredity.

New Face for Ajanta, Ellora

The face-lifting of the World-renounced Ajanta and Ellora caves will begin in 1992 with generous help from Japan.

The monuments of these caves (200 BC-700 AD) beautifully depict scenes from the life of Buddha–his birth, youth, renunciation, attainment of bodhi and acquisition of nirvana–and from the Jataka tales.

Ever since the caves of Ajanta and Ellora were accidently discovered in April 1819 by John Smith of the Madras Cavalry, visitors have flocked the place, praising the marvellous sculptures. These ancient show-pieces attract scholars, historians and Buddhists in increasing number, mainly from Japan, Korea, Thailand and Sri Lanka. Which have practised Buddhism for a long time.

The Ajanta caves, situated to the north of Aurangabad and about 418 km from Bombay, are renowned for their mural paintings. Ellora caves are located at 29 km from Aurangabad.

About 6,00,000 tourists visit the caves every year. Of them about 50,000-60,000 are foreigners.

Over the centuries smoke, dust and the preservative coats of varnish have obscured some of the Ajanta paintings. Recently, a number of them were brought to light as a result of cleaning by chemicals.

A package for renovation and preservation prepared by the Maharastra Tourism Development Corporation includes conservation of Ajanta and Ellora caves by modern chemical treatment and help preserve and enrich the environment of the region through massive afforestation. Also on the anvil is a plan for the all-round development of the surrounding countryside through better railway network, better and wider black-topped roads, improved water supply and sewerage, supply of electricity, modern electronic telephone exchanges and telex services.

The project also envisages the setting up of reception centres for visitors and provision of allied facilities such as landscaping, battery-operated car coaches and shuttles to reduce pollution, training courses for guides and computerised management of tourists' arrival, stay and departures.

The facilities will also include a library and a museum of international standard. An institute for the study of rock-cut caves and sculptures will also be set up. Besides, there will be meditation centres, viharas and facilities for scholars and halls to hold lectures, seminars and conferences.

Provision will also be made for parking cars, restaurants, rest places, picnic spots, parks and recreational facilities. Craft centres, shopping complexes and an amphitheatre are also planned.

A light and sound show at the famous fort of Daulatabad will also be introdeced.

All these facilities will be set up at a distance of at least 4 km from the Ajanta caves so as not to distrub the tranquility and serenity of the monument. Industrial and other activities within specified radius from the monuments will be disallowed so as to mantain the ecological balance of the project area.

The total cost for this project–which will be executed in two phases–works out to be Rs. 195.614 crore. Of this, the state government will share Rs. 139.73 crore, the centre will contribute Rs. 32.88 crore and the private sector Rs. 23 crore.

LANDMARKS OF HISTORY

The first wave of Aryan immigration into India began in 1500 B.C. They settled in the Punjab. Composition of the Rig Veda was the high watermark of the Vedic Age.

1000 B.C.: Aryans expand into the valley of the Ganga: Composition of the *Brahmanas*.

900: Mahabharata War.

800: Aryans penetrate into Bengal: Composition of the *Mahabharata*: First version of *Ramayana*: Beginning of the Epic Age.

550: Composition of the *Upanishads*.

544 (?): Traditional Date of Buddha's Nirvana.

527 (?): Accession of Darius I in Persia.

518: Darius sends Scylax on a naval expedition down the Indus: Persian conquest of north west India: Formation of a Persian satrapy in India.

326: Alexander invades India. 323: Death of Alexander.

321: Chandragupta unseats the Nanda dynasty in Pataliputra and founds the Maurya dynasty. Kautilya, the Chief Minister of Chandragupta, writes *Arthasastra* (Science of Government).

272-232: Reign of Asoka.

185: Pushyamitra, the Mauryan General overthrows the last Mauryan Emperor Brihadratha and founds the Sanga dynasty.

145: Chola king Erata conquers Ceylon. Kharavela builds up an empire in Kalinga.

58: The Krita-Malava-Vikrama era.

30: Satavahana dynasty in the Deccan. Pandyan Empire in the far south.

26: A Pandyan king sends an ambassador to Rome. Chera kings in Kerala.

A.D. 40: The Sakas or Scythians in power in the Indus Valley and Western India.

52: Parthian King Gondopharnes in North West India. St. Thomas begins preaching in India.

78: Saka Era begins.

98-117: Kanishka, the Scythian King.

320: Chandragupta I establishes the Gupta dynasty—Gupta Era begins.

360: Samudra Gupta conquers the whole of northern India and much of the Deccan.

380-413: Chandragupta Vikramaditya—The Golden Age of the Guptas—Literary Renaissance—Kalidasa and other poets. Renewal of Hinduism.

606: Accession of Harsha Vardhana.

609: Rise of the Chalukyas.

622: Era of the Hejira begins.

711: Invasion of Sind by Muhammad Bin Kassim.

753: Rise of the Rashtrakuta Empire.

892: Rise of the Eastern Chalukyas.

985: The Chola Dynasty—Rajaraja the Great.

1026: Sack of Somnath by Mahmud of Ghazni.

1191: Prithvi Raj Chauhan, King of Delhi, routs Muhammad Ghori—the first battle of Tarain.

1192: Muhammad Ghori defeats Prithvi Raj—second battle of Tarain.

1206: Qutbuddin Aybek establishes the Slave dynasty at Delhi.

1221: Mongol invasion under Genghis Khan.

1232: Foundation of the Qutub Minar

1290: Jalaludin Firuz Khilji establishes the Khilji dynasty at Delhi.

1298: Marco Polo visits India.

1320: Ghiyasuddin Tughluk founds the Tughluk dynasty at Delhi.

1333: Ibn Batutah arrives in India.

1336: Founding of Vijayanagar (Deccan).

1398: Timur invades India.

1424: Rise of the Bahmani dynasty (Deccan).

1451: The Lodi dynasty—Bahlul Lodi ascends the throne of Delhi.

1496: The birth of Guru Nanak Dev.

1489: Adil Shah dynasty at Bijapur.

1490: Nizam Shahi dynasty at Ahmadnagar.

1498: Vasco da Gama lands at Calicut.

1510: Portuguese capture Goa—Albuquerque Governor.

1518: Kutab Shahi dynasty at Golconda.

1526: First Battle of Panipat—Babur defeats the Lodis—Establishment of the Mughal dynasty.

1530: Humayun succeeds Babur.

1539: Death of Guru Nanak Dev; Sher Shah defeats Humayn and becomes emperor of Delhi; Death of Guru Nanak Dev

1555: Humayun recovers the Delhi throne from Eslam Shah, successor of Sher Shah.

1556: Death of Humayun—Accession of Akbar. Akbar defeats Hemu at the second battle of Panipat.

1564: Akbar abolishes 'Jiziya' or poll tax on Hindus.

1565: Battle of Talikota-An alliance of Muslim rulers in Deccan defeats and destroys Vijayanagar Empire.

1571: Foundation of Fatehpur Sikri by Akbar.

1576: Battle of Haldighat. Akbar defeats Rana Pratap Singh of Mewar.

1582: Akbar proclaims *Din Ilahi* or Divine Faith—an attempt at synthesising Hinduism and Islam.

1597: Akbar completes his conquests. Death of Rana Pratap.

1600: English East India Company constituted.

1602: Netherlands East India Company formed

1604: Compilation of "Adi Granth" the Holy Book of Sikhs.

1605: Death of Akbar and the accession of Jehangir.

1606: Martyrdom of Guru Arjan Dev.

1609: The Dutch open a factory at Pulicat.

1611: The English build a factory at Masulipatam.

1627: Death of Jehangir—Accession of Shah Jehan—Birth of Shivaji.

1631: Death of Shah Jehan's wife Mumtaz Mahal—The building of the Taj Mahal.

1639: Fort St. George at Madras by the English.

1658: Aurangzeb becomes Emperor of Delhi.

1664: Shivaji assumes royal title.

1666: Birth of Guru Gobind Singh

1675: Martyrdom: Guru Tegh Bahadur

1699: Guru Gobind Singh creates 'Khalsa'.

1707: Death of Aurangzeb.

1708: Guru Gobind Singh dies.

1720: Accession of Baji Rao Peshwa at Poona.

1739: Nadir Shah of Persia conquers Delhi.

1742: Marathas invade Bengal—Dupleix, French Governor of Pondicherry.

1748: First Anglo-French war.

1757: Battle of Plassey—The English defeat Siraja Daulah—Mir Jafar, Nawab of Bengal.

1760: Battle of Wandiwash—The English defeat the French.

1761: Third Battle of Panipat—Ahmed Shah Abdali, the ruler of Afghanistan, defeats the Marathas—Maratha imperialism checked.

1764: Battle of Buxar—the English defeat Mir Kasim.

1765: The English get Diwani Rights in Bengal, Bihar and Orissa—Clive, Governor in Bengal.

1766: The English secure Northern Circars in the Carnatic.

1767-69: First Mysore war—the British conclude a humiliating peace with Hyder Ali of Mysore.

1772: Warren Hastings, Governor of Bengal.

1773: The Regulating Act by the British Parliament.

1775-82: First Anglo-Maratha war: The Treaty of Salbai.

1780: Birth: Maharaja Ranjit Singh

1780-84: The Second Mysore War. The English defeat Hyder Ali.

1784: Pitt's India Act.

1790-92: Third Mysore War between the English and Tipu—Treaty of Seringapatam.

1793: Permanent Settlement of Bengal.

1796: Marquess of Wellesley Governor General.

1799: Fourth Mysore War—The English defeat Tipu—Death of Tipu—Partition of Mysore.

1801: The English annex the Carnatic.

1803-5: Second Anglo-Maratha War. British under Sir Arthur Wellesley inflict a crushing defeat on the Marathas at Assaye.

1817-19: Marathas finally crushed.

1828: Lord William Bentick becomes Governor General—Era of social reforms—Prohibition of Sati (1829). Suppression of Thugs (1837).

1831: Rise of the Sikhs under Ranjit Singh.

1839: Maharaja Ranjit Singh dies.

1845-46: First Anglo-Sikh War–Sikhs defeated.

1848: Lord Dalhousie Governor General.

1848-49: Second Anglo-Sikh War—Sikhs defeated in battle (1848). The British annex Punjab.

1853: First Indian Railway – Bombay to Thana.

1857-58: First War of Indian Independence.

1858: British Crown takes over the Indian Government—Queen Victoria's Proclamation.

1861: Indian Councils Act—Indian High Courts Act—Indian Penal Code.

1868: Railway opened from Ambala to Delhi.

1877: Delhi Durbar—The Queen of England proclaimed Empress of India.

1878: Vernacular Press Act.

1881: Factory Act—Rendition of Mysore—Mysore State restored to its original ruler.

1885: Ind. Nat. Congress– First meeting.

1892: Indian Council Act to regulate Indian administration.

1899: Lord Curzon becomes Governor General and Viceroy.

1905: First Partition of Bengal.

1906: Formation of the Muslim League.

1908: Newspapers Act.

1909: Minto-Morley Reforms.

1911: King George V and Queen Mary hold Durbar in Delhi. Partition of Bengal notified to create the Presidency of Bengal. The Imperial capital shifted from Calcutta to Delhi.

1914: The First World War begins.

1915: Defence of India Act.

1918: World War ends.

1919: Rowlatt Act intended to perpetuate the extraordinary powers enjoyed by the Government during the war provokes country-wide protests. The massacre at Jalianwallabagh. Ali brothers and Maulana Abul Kalam Azad start the Khilafat movement (for restoring the Turkish Khalifate) with Gandhiji's support. Perfect Hindu-Muslim accord. Montague-Chelmsford Reforms offer limited provincial autonomy to Indians.

1920: Congress okays non-cooperation movement. Students leave colleges, lawyers leave practice. Bonfire of British clothes, etc. to show popular dissatisfaction with the reforms.

1921: Moplah (Muslim) rebellion in Malabar. Visit of the Prince of Wales. Nationwide hartal. Census of India.

1922: Civil Disobedience Movement. Congress makes Gandhiji sole leader of Bardoli satyagraha. Outburst of violence at Chauri Chaura. Gandhiji suspends movement on this account.

1923: Swarajya party started by C. R. Das and Motilal Nehru. Swarajists propose to enter the Councils and wreck the government from within.

Khilafat movement fizzles out as Kemal Pasha declares Turkey a secular state. Hindu-Muslim riots.

1925: Death of C. R. Das.

1926: Lord Reading expounds to the Nizam what paramountcy implies. Royal Commission on Agriculture. Factories Act.

1927: Indian Navy Act. Simon Commission appointed.

1928: Simon Commission comes to India. Boycott by all parties. All Parties' Conference. Muslim leaders leave the Conference.

1929: Lord Irwin, Viceroy of India, promises Dominion Status for India. Lahore Session of the Congress asks for independence. On the midnight of Dec. 31, Pandit Jawaharlal Nehru, President of the Congress, hoists the National Flag at Lahore.

1930: Jan. 26 observed as Independence Day all over India. Civil Disobedience Movement continues. Gandhiji goes walking to Dandi—Salt Satyagraha. Repression let loose by the government. First Round Table Conference.

1931: Gandhi-Irwin Pact. Second Round Table Conference. Census of India.

1932: Suppression of Congress movement. Third Round Table Conference. The Communal Award. Poona Pact.

1933: White Paper on Indian reforms.

1934: Civil Disobedience Movement called off.

1935: Government of India Act.

1936: Death of King George V. Accession and abdication of Edward VIII. Accession of George VI.

1937: Inauguration of Provincial Autonomy. Congress Ministries formed in a majority of the provinces.

1938: Second World War begins. Also resignation of Congress Ministries. Political deadlock in India.

1941: Japan enters the war. Attack on Pearl Harbour.

1942: Singapore falls to Japan. Japan occupies Rangoon. The British evacuate Burma. Cripps Mission to India. Both Congress and Muslim League refuse Cripps offer. Congress adopts Quit India Resolution (Aug. 8). Congress leaders arrested and Congress declared an illegal body (Aug. 9). Subhash Chandra Bose (Netaji) forms the Indian National Army in Malaya, with the help of the Japanese. He inaugurates the Government of Free India at Singapore.

1943: Lord Wavell Viceroy and Governor General of India. Wavell's proposals for a settlement fall through as the Congress and the Muslim League could not agree.

1945: The Indian National Army under Bose surrenders to the British after collapse of Japan. National Army personnel tried for treason in India.

1946: Demonetisation of currency notes of the value of Rs. 500 and above (Jan. 12). Demonstrations against the trial of the INA men. The ratings of the Royal Indian Navy rise in open mutiny (Feb. 18). Cabinet Mission in India (Aug. 19). Cabinet Mission announces its plan for an interim government and a constituent assembly. The interim government is to be formed by reconstituting Viceroy's Executive Council. Both Congress and the Muslim League reject the proposal. Later the Congress accepts it. So the interim government is formed by inducting Congress nominees only. The Muslim League takes umbrage and starts direct action. Muslims attack Hindus in Calcutta and the rest of Bengal. Hindus retaliate. Riots break out. Viceroy persuades the Muslim League to come in. But the League declines to join the Constituent Assembly unless the demand for a separate state—Pakistan—is conceded.

THE NATIONAL MOVEMENT

The National Movement or the movement for independence was a part of a larger spectrum of national resurgence, which covered almost all aspects of national life, religious, social, educational, cultural and economic.

While the progress in the different spheres differed in degree and in kind from region to region, one common desire animated all regions, namely, gaining independence. How the British administration tackled this problem and how it finally ended in the partition of India and the formation of two independent states, India and Pakistan, is too long a story to be recounted in a few pages.*

When Lord Dalhousie laid down his office in 1856 and Canning took over as Governor General the British Empire in India had extended to its natural boundaries - from Indus in the west to Irrawady (Burma) in the east and from the Himalayas in the north to Cape Comorin (Kanyakumari) in the far south. The British Indian dominion was made up of two distinct political segments—territories directly administered by the East India Company and those ruled by Indian princes who owed fealty to the company. For the first time in many years, peace seemed to have settled all over India.

But those who knew the antecedents leading to the establishment of *Pax Britannica* in India were skeptical of the apparent peace. The pacifist Lord Canning who succeeded the aggressive Lord Dalhousie as Governor General felt that the calm was ominous.

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* All unacknowledged quotations in the Section are from Tara Chand, *History of the Freedom Movement in India*, Vols. I-IV.

In the summer of 1857 the massed clouds burst and the entire British dominion in India shook to its foundations.

This was the revolt of 1857, which the British historians have dubbed the *Sepoy Mutiny* and the Indian Historians, the *First War of Independence*. True, it began as a mutiny of Indian soldiers against their British commanders. But it soon changed its character and became a fight against British rule as such.

Indian soldiers had broken out in open mutiny against British officers many times previously—in 1806 at Vellore (Madras), in 1842 in Bengal, in 1844 in Sind, then in Bihar and Punjab. None of these had any political overtones. But the so-called Mutiny of 1857 differed radically in this respect.

The two elements—military and political coalesced in the revolt of 1857. The Indian soldiers having massacred the British personnel, marched to Delhi in May, 1857. They proclaimed the aged Mughal Emperor Bahadur Shah II as the Emperor of India. Bahadur Shah promptly issued a proclamation urging upon the people of India—Hindus and Muslims alike—"to end the tyranny and the oppression of the infidel and treacherous English."

It is not quite correct to describe the revolt of 1857 as a national revolt. For, at that time, India had not yet become a nation. The revolt itself was the last kick of a dying feudal order, led by a decadent aristocracy. "The idea of a nation and therefore of nationality was a bequest of English education."

There is little doubt that the knowledge of English acquired by Indians in every part of the country facilitated inter-communication and expedited the process of national integration. The Indian middle class, steeped in English literature and history, gorged themselves with the ideas of *liberty*, *equality* and *fraternity* which the American War of Independence (1773-1787) and the French Revolution (1789) had glorified.

The immediate results of the 1857 revolt were three:

1. The administration of British India, until then under the control of the Board of Directors of the East India Company, was taken over by the British Government. Queen Victoria was proclaimed the Empress of India and the Governor General was designated the Viceroy and Governor General.

2. The British Indian army was re-organised. The quota of British personnel in the army was considerably enhanced and the artillery divisions were manned entirely by the British. In addition, many purely British regiments were formed.

3. The paramountcy of the British Government was proclaimed, that is to say, all ruling kings and titular princes of India were declared feudatories of the British Crown. This proclamation raised many eyebrows among Indian princes, but there was little they could do in the matter.

With the indigo riots, the agitation for freedom acquired greater momentum. Meanwhile the spread of English education brought into being a new generation imbued with liberal ideas and willing to fight a long drawn battle with the British for independence. At the same-time, a vernacular *Fourth Estate* was slowly taking shape to express Indian aspirations.

This resulted in the promulgation of the *Vernacular Press Act of 1878* intended to muzzle the periodicals in Indian languages. The reason advanced by Lord Lytton, the Viceroy, was that "the increasingly violent native press was directly provocative of rebellion." The whole of India protested against the Act and appealed to the British government to repeal it. The act was at last repealed by Lord Ripon in 1882.

Lord Lytton as Viceroy (1874-1880) fathered an offensive brood of laws and regulations. *The Arms Act* (which exempted Europeans) and the abolition of import duties on British goods were among the more obnoxious performances of Lytton.

Lord Ripon's viceroyalty, otherwise benign, was sullied by the infamous *Ilbert Bill*. This bill amended the Criminal Procedure Code and specified that only European judges could try European offenders for serious misdemeanours.

In 1883 the agitation over the Ilbert Bill still continued. Surendranath Banerjee was arrested for an article he wrote in the *Bengali*. Soon arrests of other persons for seditious articles followed. This accumulation of discriminatory laws, arrests and prosecutions, roused the masses.

Some Englishmen in India felt the same way. Henry Cotton and Allen Octavian Hume among them thought that an abiding concord between the government and the people had to be built up.

Hume formed the Indian National Union in 1854. The aim of the Union was "to oppose by all constitutional methods all authorities high and low here or in England, whose acts and omissions are opposed to the principles of the Government of India act laid down by the British Parliament and endorsed by the British Sovereign."

INDIAN NATIONAL CONGRESS

It was the Indian National Union formed by A.O. Hume that assumed the name Indian National Congress at the conference held in Bombay under the Presidentship of W.C. Banerjee, a veteran lawyer of Calcutta. It was attended by 72 delegates from all over India.

The birth of the Indian National Congress was an unprecedented phenomenon in the political history of India. It marked the entry of the new educated middle class into national politics. The middle class, a byproduct of the British Raj, was mainly composed of three classes—agricultural, industrial and professional. Each class had its own interests but a growing sense of nationality—often extolled as patriotism—united them in a common programme of action.

From 1885 onwards the Indian National Congress met every year. Its influence spread rapidly among the middle classes. Three main topics engaged its attention: (1) representative government and expansion of the number and functions of legislative councils both in the provinces and at the centre, (2) Indianisation of higher services, (3) Indian poverty.

As the 19th century drew to a close—to be precise on December 30, 1898—Lord Curzon* came down to India as Viceroy. "Curzon was a brilliant intellectual-scholar, writer, speaker-but he was inordinately ambitious, overwhelmingly vain, obstinate, heedless of advice, contemptuous of opposition, self-righteous, unscrupulous and moody...."

The crowning ambition of Curzon was to destroy the political influence of the educated middle class, among whom the Bengali intelligentsia were the most prominent. So his first attention was directed to Bengal.

By a Royal Proclamation on 16th October, 1905 Bengal Province was reduced in size and population and a new province called East Bengal was created.

The scheme was condemned not only in India but also by the British Press.

The Indian National Congress, unanimously condemned the partition. In the two Bengals themselves over 2000 public meetings, attended by 500 to 50,000 people were held. In these meetings Hindus and Mohammedans joined in the protests with equal zeal and earnestness. The courage with which Bengal faced its trial stirred the whole of India.

The constitutional agitation so far pursued had not made an impact. The Swadeshi movement and boycott of foreign goods, became the mainstay of the freedom movement. Side by side, open defiance of government orders, refusal to pay taxes and bandhs and *hartals* followed one after the other. The Congress approved the boycott of foreign goods—particularly cloth. The Swadeshi movement gave a fillip to indigenous industries especially in textiles.

Lord Minto who succeeded Curzon followed a judicious policy of admixture of the carrot and the stick, that is, unfaltering repression on the one hand and bonafide attempts at ushering in political reforms on the other. The 1905 session of the Congress at Banaras is in a sense, a turning point in the history of the Congress.

The president, Gopalakrishna Gokhale, though a moderate himself, approved of aggressive agitation.

From 1905 the Congress started functioning as a permanent organization, though annual elections often led to a change of working personnel.

In 1906 the police broke up a Congress conference in Barisol (Calcutta). The delegates were lathi-charged. Eminent leaders were man-handled by the police. This unprecedented treatment meted out to a peaceful gathering led to a radical change in the character of the national movement.

Hereafter, force was to be met by force. The white man's blood was to atone for the innocent blood drawn from inoffensive nationalists. This was a victory for the extremists. A crop of revolutionary leaders emerged—Aswini Kumar Dutt, Brahma Bhandhab Upadhyaya, Aurobindo Ghosh, Lajpat Rai and Bal Gangadhara Tilak. Tilak was from Maharashtra, and easily led the others. In Bihar, Khaparde emerged as the leader and Lajpat Rai led Punjab.

While everybody supported the Swadeshi movement many disapproved of the boycott programme and still more, the terrorist activities. Their main fear was that this would alienate British public sympathy for Indian aspirations and harden the hearts of the rulers.

The Congress ranks sought a via media by appealing to Dadabai Naoroji, the grand old man of India to preside over the Calcutta session in 1907. Dadabai tried his best to placate both parties and proposed a new common platform for both, namely *Swaraj* or self-rule as the goal of the National Congress.

Fuller, the Lt. Governor of the newly created East Bengal province was a typical imperial bureau-

Congress Presidents from 1885

1885	*W.C. Bannerjee*
1886	*Dadabhai Naoroji*
1887	*Badruddin Tyabji*
1888	*George Yule*
1889	*Sir William Wedderburn*
1890	*Sir Phirozshah Mehta*
1891	*P. Ananda Charlu*
1892	*W.C. Bannerjee*
1893	*Dadabhai Naoroji*
1894	*Alfred Webb*
1895	*S.N. Banerjee*
1896	*Rahimtulla Sayani*
1897	*C.S. Nair*
1898	*A.M. Bose*
1899	*R.C. Dutt*
1900	*N.G. Chandravarkar*
1901	*D.E. Wacha*
1902	*S.N. Banerjee*
1903	*L.M. Ghosh*
1904	*Sir Henry Cotton*
1905	*G.K. Gokhale*
1906	*Dadabhai Naoroji*
1907	*Dr. Rashbihari Ghosh*
1908	*Dr. Rashbihari Ghosh*
1909	*M.M. Malaviya*
1910	*Sir William Wedderburn*
1911	*B.N. Dhar*
1912	*R.N. Madholkar*
1913	*Syed Mohammad Bahadur*
1914	*Bhupendra Nath Basu*
1915	*Sir S.P. Sinha*
1916	*A.C. Mazumdar*
1917	*Mrs. Annie Besant*
1918	*(Special Session) Hassan Imam*
1918	*(Annual Session) M.M. Malaviya*
1919	*Motilal Nehru*
1920	*(Special Session) Lajpat Rai*
1920	*(Annual Session) Vijayaragavachariar*
1921	*C.R. Das (In Prison) Acting President* *Hakim Ajmal Khan*
1922	*C.R. Das*
1923	*(Special Session) A.K. Azad*
1923	*(Annual Session) Mohammed Ali*
1924	*M.K. Gandhi*
1925	*Mrs. Sarojini Naidu*

1926	*S. Srinivasa Iyengar*
1927	*Dr. M.A. Ansari*
1928	*Motilal Nehru*
1929-1930	*Jawaharlal Nehru*
1931	*Vallabhai Patel*
1932	*R. Amritlal*
1933	*Mrs. J.M. Sen Gupta*
1934	*Rajendra Prasad*
1935	*Rajendra Prasad*
1936	*Jawaharlal Nehru*
1937	*Jawaharlal Nehru*
1939	*Subhash Chandra Bose*
	(Subhash Chandra Bose was re-elected but had to resign. Rajendra Prasad was appointed in his stead)
1940-46	*(Maulana) Abul Kalam Azad*
1946 (July-Sept.)	*Jawaharlal Nehru*
1946-47	*J.B. Kripalani*
1948 Jaipur	*Pattabhi Sitaramaiah*
1950 Nasik	*Purushotam Das Tandon*
1951 Delhi	*Jawaharlal Nehru*
1953 Hyderabad	*Jawaharlal Nehru*
1954 Kalyan	*Jawaharlal Nehru*
1955 Avadi	*U.N. Dhebar*
1956 Amritsar	*U.N. Dhebar*
1957 Indore	*U.N. Dhebar*
1958 Pragyotishpur	*U.N. Dhebar*
1959 Nagpur	*U.N. Dhebar*
1960 Bangalore	*indira Gandhi*
1961 Bhav Nagar	*N. Sanjiva Reddy*
1962	*N. Sanjiva Reddy*
1964 Bhubaneswar	*K. Kamaraj*
1965 Durgapur	*K. Kamaraj*
1966 Jaipur	*K. Kamaraj*
1968 Bangalore	*S. Nijalingappa*
1969 New Delhi	*C. Subramaniam*
1970 Delhi	*Jagjivan Ram*
1971 Ahmedabad	*D. Sanjivayya*
1972 Calcutta	*Shankar Dayal Sharma*
1975 Chandigarh	*D.K. Barooah*
1976 New Delhi	*Brahamaananda Reddy*
1978 New Delhi	*Indira Gandhi*
1983 Calcutta	*Indira Gandhi*
1984 New Delhi	*Rajiv Gandhi*
1991 New Delhi	*P.V. Narasimha Rao*

crat. He exploited Hindu-Muslim differences of opinion to create faction. He openly supported the Muslim majority and discriminated heavily against the Hindu minority in the province. He let loose unbridled repression in East Bengal humiliating and insulting respected Hindu leaders, ruthlessly punishing teachers and students and carefully discriminating between Hindus and Muslims at every turn.

Minto, the Viceroy, did not approve of Fuller's policy as it violated the spirit of the central policy. The Secretary of State Morley fully endorsed the Viceroy's view point. Fuller did not agree with the views of his superiors in the matter and offered to resign rather than fight them. Fuller vacated the scene.

But the seeds of distrust and suspicion between Hindus and Muslims which he had sown sprouted. The Muslims formed a political organization, tentatively named *Muslim League*, which published anti-Hindu and pro-government pamphlets.

"Communal riots on bigger scale occurred in 1907 at Comilla in Triperah district and in Jamalpur taluk of Mymensingh district." In future these riots were to become almost a daily occurrence everywhere in British India.

Differences of opinion regarding attitudes and policies to be adopted in the National Movement came to a head in 1907 when the Congress met at Surat. The moderates (doves) in the Congress who included such statesmen as Gopala Krishna Gokhale, Phirozshah Mehta, Surendranath Banerjee and Madan Mohan Malaviya were against the extremist programme of action, lest it should strengthen the anti-Indian stance of the British public.

The extremists who also contained a galaxy of celebrities like Tilak, Aurobindo Ghosh, Bipin Chandra Pal and Lala Lajpat Rai had no faith in the bonafides of the British Indian government or in the goodwill of the pro-Indian section of the British public. Leaders of the extremist faction wanted to "capture the Congress and make it an instrument of revolutionary action."

The moderates retained control of the Congress. They met immediately after and drafted the new creed of the Congress. Only those who accepted the new creed were eligible for membership. This naturally excluded the extremists. The moderates, thus left alone, had to keep the Congress going as best they could.

REPRESSION AND REFORM

The year 1908 saw a hideous tug of war between the Government armed with powerful weapons of repression and an infuriated people putting up resistance with all their force of will and sacrifice against the onslaught of the other.

Trials and convictions became the order of the day. Outstanding leaders were either imprisoned or deported. Bipin Chandra Pal and Lajpat Rai went into self-imposed exile, Aurobindo escaped to Pondicherry, a French enclave and Tilak remained incarcerated in Mandalay.

Morley-Minto Reforms of 1909 provided for greater association of qualified Indians with the Government in deciding public questions. One seat on the Governor General's Council was reserved for an Indian. Satyendra Sinha (later Lord Sinha of Raipur) was the first Indian to be appointed to the Governor General's Council as Law Member. In the Provincial Councils, the Muslim community got representation.

If the reforms were intended to pacify unrest, they failed. The vicious chain of violence, repression and more violence remained unbroken. The mist of doubt and apprehension clouded the horizon.

This satisfied the policy makers in Delhi and London. What they wanted was to boost the Muslim League as a counter weight to the Congress. They knew that the move was likely to create communal conflict and apparently welcomed it for that very reason.

The First World War brought Britain into conflict with Turkey, whose Sultan styled himself the Khalif of all Muslims. That the Khalifate was in danger shook the passivity of the Indian Muslims and made them restive and thirsting for some sort of action.

The Montague-Chelmsford Report noted that though the Muslims as a whole kept aloof from revolutionary activities from 1903 to 1910 "since 1911 their attitude has been growing far less acquiescent". At the (Royal) Coronation Durbar held on December 12, 1911, two important announcements were made, one was the annulment of the partition of Bengal and the other the transfer of the capital from Calcutta to Delhi.

The transfer of the capital evoked little or no enthusiasm among the Muslims. One salutary effect was that the old Muslim leaders, who were preferred and pampered by the British found themselves practically ignored. Many of the oldtimers like the Aga Khan and the Nawab of Dacca left the League. Fresh blood like M. A. Jinnah and Muhammed Ali became the leaders of the organization.

The change in leadership helped to bring the Congress and League together. Both represented the middle class intelligentsia of India. The 1913 session of the League at Lucknow, foreswore the oft-repeated loyalty to the crown and adopted 'self-government under the aegis of the British crown' as its political goal. In 1915 the Congress and the League chose the same place (Bombay) for their annual conference and most of the delegates of both organizations indulged in frequent exchange of ideas.

With Turkey joining Germany against the allies in the first World War, loyalty of the Indian Muslims to the British crown became suspect. The Muslim newspapers which supported Turkey were suppressed and repression was let loose on the Muslims.

Side by side, the British government adopted conciliatory tactics also, like promising that the Muslim holy places outside India will be protected by the allies. Meanwhile, Annie Beasant who had joined the Congress joined hands with Tilak in demanding Home Rule for India.

Montford Reforms, so called after Montague, the Secretary of State for India and Chelmsford the Viceroy, are contained in the Government of India Act 1919. Before the Act was passed, the British made the historic announcement (Aug. 20, 1917) that the policy of H.M.'s Government..."*is that of increasing association of Indians in every branch of the administration and the gradual development of* *self-governing institutions with a view to the progressive realisation of responsible government in India as an integral part of the British Empire".*

With the defeat of Turkey and the abolition of the Sultanate, the Khalifate ceased to exist. This agitaged all Muslims in India. The Muslims of the world had no religious head. In 1919 a conference at Lucknow, sponsored by Muslim leaders, the Ali brothers—Muhammad Ali and Shaukat Ali—and Abul Kalam Azad decided to form an All India Khilafat Committee.

Seth Chotani of Bombay was elected President and Shaukat Ali, brother of Muhammad Ali, the Secretary. Shaukat Ali, who was at the time in prison, was to take charge as soon as he was released.

Rowlatt Act, so-called after the President of the Committee, which was constituted to review the measures to be adopted to contain the national movement, sought to perpetuate the extraordinary powers conferred on the government during the war period. These were framed as 2 Acts (collectively known as the Rowlatt Act) which the Imperial Legislative Council dutifully passed in March, 1919.

This Act roused the ire of all Indians, Hindus and Muslims alike. Muhammad Ali Jinnah, later to become the President of the Muslim League and the founder of Pakistan, resigned his seat in the Council. In his letter of resignation to the Viceroy he wrote "In my opinion a government that passes such a bill or such laws in times of peace forfeits the claim to be called a civilized government." The Rowlatt Act, in point of fact, proved a shot in the arm for the Khilafat movement.

Punjab saw the worst manifestation of British power. Its Governor, Michael O' Dyer seemed to love brutal savagery. He warned the public that they would be held responsible for the proper conduct of the public meetings and for the language used in the speeches. On 10th April, when the news of Gandhiji's arrest reached Lahore, the students took out a protest procession. The police opened fire on the unoffending processionists wounding many.

Worse was the fate of Amritsar, which held protest demonstrations. Satyapal and Kitchelew were prohibited from speaking at Amritsar and were arrested for deportation. The news of deportation infuriated the people. Crowds marched to the Deputy Commissioner's office to demand the cancellation of the order of deportation. Mounted police fired upon the crowd, killing some and wounding many.

A protest meeting against this outrage was arranged at Jallianwallabagh on the 13th. The government, in anticipation of trouble, handed over Amritsar to the army under the command of General Dyer. Jallianwallabagh turned out to be a deadly trap. An enclosure, protected by high walls, had only one small entrance on one side and three or four small openings on the other. As the crowd filled the enclosure, Dyer and his troops appeared at the main entrance and bullets rained on the crowd. Men died in hundreds, while most of those who sought escape through the narrow openings on the other side were crushed to death in the melee. The massacre at Jallianwallabagh was an act of unprovoked savagery, unequalled in history. It shook the country from end to end.

The first Khilafat Conference was held at Delhi on the 23rd November, 1919. It was presided over by Fazlul Huq. Gandhiji, Motilal and Malaviya among the Congress leaders were present. On the second day Gandhiji was voted to the chair. In 1920, when the Congress Committee met at Delhi, Gandhiji presented a programme of *non-cooperation* which was accepted by the Committee.

Leading lawyers like Motilal Nehru and C. R. Das, gave up their profession. Subhash Chandra Bose resigned from the Indian Civil Service. From 1st August 1920 when it started to 6th February, 1922 when it was suspended, the non-cooperation movement moved in a crescendo. The boycott of foreign clothes and bonfires were becoming popular in big cities like Calcutta, Bombay, Madras and Allahabad. The non-cooperation movement was a roaring success.

On the 15th Feb., 1922 a small town Chawri Chawra in the district of Ghorakpur in U.P. became the scene of a violent clash between the police and some processionists. The police took refuge in the station but the mob set fire to it. Gandhiji responded by suspending the non-cooperation movement, as he considered *Chawri Chawra* an open violation of non-violence.

The sudden suspension of the movement occasioned violent differences of opinion. Most of the Khilafists lost faith in Gandhiji's leadership. Taking advantage of this division in nationalist ranks, the government arrested Gandhiji on March 10, 1922. He pleaded guilty and asked for the severest punishment. He was convicted to 6 years imprisonment and confined to the Yervada Central Prison in Pune (then Poona).

Khilafat Movement, however strong, had ultimately fizzled out.

Swaraj Party founded by C. R. Das and Motilal Nehru in 1923 was desirous of working the Montford Reforms, while the Nationalists or Extremists were opposed to it. The Swaraj Party consisting of Moderates and Liberals, contested the 1920 elections and some of them were elected, Srinivasa Sastri and Sivaswamy Iyer among others. They formed a sort of opposition and succeeded in defeating many government motions and abolishing certain obnoxious acts as the Press Act of 1910.

PACTS AND CONFERENCES

The prerequisite of *Swaraj* or independence was an accord between the Hindus and the Muslims. All leaders were agreed on it. The Hindu majority believed that *Swaraj* meant *Muslim Raj* while the Muslim minority was afraid that the Hindu majority would swamp them.

The Moplah (Muslims) rebellion of 1921 in Kerala (then British Malabar) transformed itself as the massacre of Hindu landed families, destruction of Hindu properties and Hindu temples. Even forcible conversion of some Hindus was reported.

The revival of the Hindu Maha Sabha in 1923 added fuel to the fire. In 1924, communal troubles seemed to hold the whole of India in its diabolic grip. Its worst manifestation was at Kohat (North West Frontier Province) on the 9th and 10th September 1924. There were large scale killings of Hindus and looting of Hindu properties and the Hindu population had to be evacuated from the town.

The suspension of the non-cooperation movement following the Chawri Chawra incidents and the vaporisation of the Khalifate (1924) left nationalist India in a political vacuum. Gandhiji felt that before further political agitation was taken up an organizational and educative build-up was necessary. Although his term of imprisonment extended to 1928 he was unconditionally released in 1924 for reasons of health.

Presiding over the Belgaum Conference in 1924 he laid down the basic programme. He told the delegates, "Go throughout your districts and spread the message of *Khaddar,* the message of Hindu-Muslim unity and the evils of untouchability and take up in hand, the youth of the country and make them the real soldiers of Swaraj".

In 1926 he retreated to his Ashram at Sabarmati and spent an year of silence, during which he concentrated on the expansion and consolidation of the Khadi programme. On the termination of his year of silence, he declared, "I have come to the conclusion, that we can have Swaraj, even Rama Raj, if we fulfil the triple programme—that is Khadi, Hindu-Muslim unity and the abolition of untouchability".

While the political terrain looked like a desert and hopes of independence a mirage, communal riots continued to rock the country. In Calcutta, Swami Shraddananda was murdered by a Muslim fanatic. In 1927 the Frontier Muslims rose against the Hindus which led to their exodus to Peshawar.

In 1927 a Parliamentary Commission was appointed to look into the question of Constitutional Reforms for India and make suitable recommendations. The Commission was headed by Sir John Simon, a leading constitutional lawyer of Britain and a member of Parliament.

The Commission visited India in 1928 and toured throughout the country collecting evidence. The Congress boycotted the commission. The Liberal Federation led by Sir Tej Bahadur Sapru did the same. Even the Muslim League joined the boycott.

While the Commission doggedly pursued its programmes seemingly oblivious of stormy scenes and angry protests, the Government of India felt the impact of the storm and was forced to do something to appease the Indian public. In 1929 Lord Irwin, the Viceroy declared that the natural issue of India's Constitutional progress was the attainment of *dominion status.* The statement also proposed to hold a Round Table Conference on the subject as soon as possible.

Meanwhile on March 16, 1927 the Council of State passed a resolution at the instance of C. Sankaran Nair recommending to the Government that no steps towards responsible Government be taken until Hindus and Muslims agreed to dispense with separate electorates.

While the talks continued Gandhiji decided to launch Satyagraha and advised the Viceroy about his decision. His first act was to go to Dandi and make salt which was then a government monopoly. He set out on the march at the age of 61 in March 1930. He reached Dandi with his followers on April 5, 1930. He walked into the sea waters and returning took a lump of salt from the salt fields and thus violated the law.

All repressive laws were soon brought into force. The repealed Press Act of 1910 was revived. Gandhiji and a lot of other outstanding leaders were arrested. In the agitation that followed some 100,000 persons were reckoned to have been imprisoned.

It was expected that with the incarceration of Gandhiji on May 5 at Yervada Jail and the imprisonment of the other leaders the movement would dissipate. The effect was just the contrary. Satyagraha became a way of life for millions of Indians and the leaderless movement grew apace every day.

In the face of the growing agitations, the Government of India decided to summon a Round Table Conference in London. Congress leaders like Gandhi who were in prison were not invited since they laid down a condition precedent for the Conference, namely the announcement that *Poorna Swaraj* for India was the ultimate objective of the Round

Table Conference.

The First Round Table Conference was opened by *King George V* on November 12, 1930. The King observed, "Ten years is but a brief span in the life of any nation but the decade has witnessed...a quickening and growth in ideals and aspirations of nationhood, which defy customary measurement of time".

This was only too true for the progress in nationalist growth during the decade was unique. If the Round Table Conference achieved nothing else it evolved a new concept of true India—a federation consisting of the British administered provinces and states ruled by Indian princes.

This was a magnificent objective, a "great and mighty conception", as Lord Reading put it. For the rest, the conference was a dismal failure.

The British authorities realised that there can be no abiding solution of the Indian question, without the active cooperation of the Congress leaders. As a first step towards reconciling the Congress, Gandhiji and the other leaders of the Congress were released from jail on January 26, 1931.

Gandhiji on release felt that he wanted peace but with honour. Britain also wanted peace but without trouble. But first, the impasse had to be broken. So Gandhiji wrote to the Viceroy, asking for an interview. A pact was agreed upon during the interview, Gandhiji was spiritualism personified. Lord Irwin was a devout Christian at the bottom. It was this common character that blossomed forth as the Gandhi-Irwin Pact in March 1931.

The Gandhi-Irwin pact was ratified by the Congress at its Karachi Session presided over by Vallabhai Patel on March 29, 1934. The *Second Round Table Conference* which opened on 7th September 1931 was distinguished by the fact that the Congress participated and was represented by Gandhiji as the sole delegate of the Congress.

By this time, a National government by Ramsay Macdonald was formed in Britain. It was dominated by the Conservative Party. Sir Samuel Hoare succeeded Wedgewood Benn as the Secretary of State for India, while Lord Willingdon replaced Irwin as Viceroy. These changes complicated matters. The British authorities wanted to exploit the communal tangle to the utmost.

A Minorities Sub-Committee was appointed by the Second Conference, presided over by the British Prime Minister. Here all minor groups agreed with the Muslim League on one point—that their interests should be maintained and protected, whatever from the Constitution assumed. It was difficult to provide such a blanket assurance to all minorities big and small. The conference concluded without reaching any decision.

When Gandhi returned to India in December 1931 the country was labouring under a load of repressive laws called Ordinances. 15 Ordinances were passed in 1931 alone. The only remedy left was to resume civil disobedience.

In the North West Frontier Province Abdul Gaffar Khan (since known as the Frontier Gandhi) raised a volunteer corps of one lakh Pathans called the Servants of God and affiliated it to the Congress.

The *Third Round Table Conference* met in London on November 17, 1932 and continued its deliberations till December 24. After the end of the conference the British Government published a White Paper which practically reproduced the Simon Commission recommendations but added a scheme for a Federal Government if the Princely States agreed. The White paper in due course became the Government of India Act 1935.

The Act of 1935 provided two alternate constitutions for the Central Government—one a Federal Government consisting of British provinces and Indian States, that is, if a majority of Indian States were willing to accede to the Federation. This never happened. The alternative was to work the 1919 Act with some modifications. This was the alternative finally accepted. In this as in all previous Acts, the Governor-General had overriding authority in all matters.

In the election Congress won, with a huge majority, in five provinces—Madras, Bihar, Central Province, United Province and Orissa. In the other provinces Congress acquired a sizeable number of seats. In 1937 the Congress took charge of the governments in seven provinces as interim ministries. In the remaining four provinces—Punjab, Bengal, Assam and Sind—non-Congress parties took office.

THE PARTITION

Though partition of India broke into history suddenly and ruthlessly, it had been in the making for a long time. Its roots were visible in the Hindu-Muslim riots which started as early as 1881 and continued intermittently.

The British administration took advantage of these riots so as to encourage the Hindu-Muslim conflict and perpetuate it. These were only the apparent causes. The real reasons were more political than religious.

The formation of the All India Muslim League at Dacca (now Dhaka) in December, 1906, provided a focal point for Muslim political aspirations. In 1937, when the Congress and the Muslim League started working provincial ministries, the rivalry between the two organizations came into the open.

In 1937, Jawaharlal Nehru wrote to Jinnah, "In the final analysis, there are only two forces in India today—British Imperialism and the Congress representing Indian Nationalism", Jinnah replied pointing out (1) that the Hindus and Muslims had nothing in common and (2) that the Muslims of India constituted a separate nation and therefore needed a separate state. The rift was complete. The partition of India was only a question of time.

The outbreak of the Second World War, which commenced with Hitler's invasion of Poland on September 1, 1939, called for a complete change of policy on both sides—the British Indian Government and the National Congress. India was declared a belligerent nation by Britain on September 3, 1939, and the British Indian administration was placed on a war footing. The war lasted 6 years, till September 1945. During this period there was a lull in national agitation.

The Congress, as a whole supported the democratic allied countries, led by Britain but resented the fact that it was not taken into consultation in declaring India a belligerent nation. In the circumstances, all that the Congress could do was to call for an immediate assurance from Britain, that independence would be given to India, as soon as the war emergency was over.

The British Government paid no heed to this demand. The Congress reacted by asking all provincial Congress ministries to resign (October 1939). The Congress ministries resigned.

In March 1940, at its annual session in Ramgarh the Congress demanded complete independence and a Constituent Assembly to draft a constitution for free India. In the same month, the Muslim League at its Lahore session demanded a separate state for the Muslims of India.

In March 1942, the British Government sent Sir Stafford Cripps to India with proposals for a new constitution. The Cripps proposals were found unsatisfactory and were rejected both by the Congress and the League. In May 1942, Gandhiji called on Britain to "Leave India to God. If this is too much, then leave her to anarchy".

In August 1942, the Congress working committee considered Gandhiji's call to Britain and passed the famous 'Quit India' resolution.

In 1945, Lord Wavell, the Viceroy, announced that he was holding a conference in Simla to consider the steps necessary to advance self-government for India in the near future. All Congress leaders, then in prison, were released. The Simla conference (June-July 1945) turned out to be a fiasco. But by the time, (July), a Labour Government came into power in Britain. The Labour Government took serious notice of the Indian situation.

The Labour Secretary of State for India, Lord Pethick-Lawrence announced that a parliamentary commission would be visiting India to negotiate the question of Indian independence. This delegation, later famous as the Cabinet Mission, announced its constitutional scheme, which im plicity recognised the right of the Muslims to have a state of their own. While the Muslim League accepted the proposals, the Congress rejected it.

This was followed by riots. The Great Calcutta Killings of August 16 to 18, 1946, were the first of the riots. Then followed the killings in West Punjab, where the Muslims were in a majority. The Congress in desperation demanded the partition of Punjab.

Lord Mountbatten who succeeded Wavell as Viceroy in March 1947, boldly announced the partition of India. The provinces where the Muslims formed the majority were to be constituted into a separate state—Pakistan.

Thus, parts of Punjab (West Punjab) and Bengal (East Bengal) and the whole of the provinces of Sind, Baluchistan and the North West Frontier became Pakistan. The rest of India formed another State. The Indian Independence Act, passed by the British Parliament (July 1947), formalised the division of India into two fully independent states—India and Pakistan.

FATHER OF THE NATION

Mohandas Karamchand Gandhi (1869-1948), when he entered public life, was at first hailed as the Mahatma (Great Soul) and was generally called Mahatma Gandhi. Since his death he has been universally acclaimed as the Father of the Nation.

Gandhiji started his public career in South Africa, where the white race ruled and Indians and native Africans alike were treated as slaves and outcastes. He entered Indian public life through the Indian National Congress, which he dominated from 1920 onwards. He was the main architect of the Indian nation and is rightly called the Father of the Nation.

The important dates and events of his life are briefly described below:

1869 Oct. 2: Born at Porbandar, Kathiawar, India,

Gandhiji proved himself as a man of the century by sacrificing his life at the altar of communal amity. But the embers are still burning...

son of Karamchand and Putlibai Gandhi.

1883: Married Kasturba.

1888: Sailed from Bombay for England to study law.

1891 Summer: Returned to India after being called to the Bar. Began to practise law in Bombay and Rajkot.

1893 April: Sailed for South Africa to become lawyer for an Indian firm. Found himself subjected to colour discrimination.

1894 May: Organized the Natal Indian Congress.

1899: Organized Indian Ambulance Corps for the British in the Boer war.

1901: With the family embarked for India.

1901-2: Travelled extensively in India, attended Indian National Congress meeting in Calcutta and opened law office in Bombay.

1902: Returned to South Africa at the request of the Indian community.

1904: Established the weekly journal 'Indian Opinion', Organized Phoenix Farm near Durban.

1906 Sept: First 'Satyagraha' campaign in protest against proposed Asiatic ordinance directed against Indian immigrants in Transvaal.

1907 June: Organized 'Satyagraha' against compulsory registration of Asiatics (The Black Act).

1908 Jan: Stood trial for instigating 'satyagraha' and was sentenced to two months imprisonment in Johannesburg jail (his first imprisonment). Summoned to consult General Smuts at Pretoria; compromise reached; was released from jail.

Feb: Attacked and wounded by Indian extremist for settlement with Smuts.

Aug: After Smuts broke agreement, second 'satyagraha' campaign began with bonfire of registration certificates.

1909 Feb: Sentenced to three months imprisonment in Volksrust and Pretoria jails.

June: Sailed for England to present Indians' case.

1910 May: Established Tolstoy Farm near Johannesburg.

1913 Sept: Helped campaign against nullification of marriages not celebrated according to Christian rites. Third 'satyagraha' campaign. Led 2,000 Indian miners from New Castle across Transvaal border.

Nov: Arrested for third time in four days.

Dec: Released unconditionally in expectation of a compromise.

1914 July: Returned to India, leaving South Africa for ever.

1915 May: Established Satyagraha Ashram near Ahmedabad.

1917: Moved Ashram to new site on Sabarmati River. Led successful 'satyagraha' campaign for rights of peasants on indigo plantations in Champaran. Defied order to leave area in April, was arrested at Motihari and tried, but case was withdrawn.

1918 Feb: Led strike of millworkers at Ahmedabad. Millowners agreed to arbitration after his three-day fast (his first fast in India).

March: Led 'satyagraha' for peasants in Kheda.

April: Organized nationwide hartal—suspension of activity for a day-against the Rowlatt Bills. Fasted at Sabarmati for three days in penitence for violence and suspended 'satyagraha' campaign which he called a 'Himalayan miscalculation' because people were not disciplined enough. Became Editor of English weekly 'Young India' and Gujarati weekly 'Navajivan.'.

1920 April: Elected president of All India Home Rule League. Successfully urged resolutions for a 'satyagraha' campaign of non-co-operation.

1921: Resolved to wear only a loin cloth to propagate homespun cotton and to signify his identification with the people. Mass civil disobedience, thousands went to jail. Gandhi invested with 'sole executive authority' on behalf of Indian Congress.

1922: Suspened mass disobedience because of violence at Chdwri Chawra and undertook five-day fast of penance at Bardoli. Arrested at Sabarmati on charge of sedition for articles in 'Young India.' Pleaded guilty in a famous statement at the 'great trial' in Ahmedabad before Judge Broomfield. Sentenced to six years' imprisonment in Yervada jail.

1929: Arrested for burning foreign cloth in Calcutta and fined one rupee.

1929 Dec: Congress session at Lahore voted for complete independence and a boycott of the legislature. *January 26* proposed as Independence day. Third all-India 'satyagraha' campaign.

1930 March 12: Set out from Sabarmati with 79 volunteers on historic Salt March 200 miles to sea at Dandi. *April 6:* Broke salt law by picking a handful of salt up at seashore. Arrested by armed policemen at Karadi and imprisoned in Yervada jail without trial. One hundred thousand persons arrested.

1931 Jan: Released unconditionally with 30 other Congress leaders. *March:* Gandhi-Irwin (Viceroy) Pact signed, which ended civil disobedience. *Aug:* Sailed from Bombay for the Second Round Table Conference in London. *Dec:* Returned to India. Authorised by Congress to renew 'satyagraha' campaign (fourth nation-wide effort).

1932 Jan: Arrested in Bombay with Sardar Patel and detained without trial at Yervada prison.

Sept. 20: Began 'fast unto death' while in prison in protest against British action giving separate electorate to untouchables.

Sept 26: Concluded "fast" in the presence of Rabindranath Tagore after the British accepted 'Yervada Pact.'

1933: Began weekly publication of 'Harijan' in place of 'Young India.'

July: Disbanded Sabarmati Ashram which then became centre for removal of untouchability.

Nov: Began ten-month tour of India to help end untouchability.

1934 Oct: Launched All India Village Industries Association.

1940 Oct: Launched limited, individual civil disobedience campaign against Britain's refusal to allow Indians to express their opinions regarding World War II. 23,000 persons imprisoned within a year.

1942: Met with Sir Stafford Cripps in New Delhi but called his proposals 'a postdated cheque; these were ultimately rejected by the Congress. Congress passed 'Quit India' resolution—the final nation-wide "Satyagraha campaign" with Gandhi as the leader. Arrested with other Congress leaders and Kasturba and imprisoned in Aga Khan Palace, near Poona. Revolts in many parts of the country.

1943 Feb 10: Began fast at Aga Khan Palace to end deadlock between Viceroy and Indian leaders.

1944 Feb 22: Kasturba died in detention at Aga Khan Palace at the age of 74.

May 6: After decline in health, was released unconditionally from detention (this was his last imprisonment; he had spent 2,338 days in jail during his lifetime).

1946: Began four-month tour of 49 villages in East Bengal to quell communal rioting over Muslim representation in provisional government.

1947: Toured Bihar to lessen Hindu-Muslim tensions. Began conferences in New Delhi with Lord Mountbatten and Jinnah.

May: Opposed Congress decision to accept division of country into India and Pakistan. Fasted and prayed to combat riots in Calcutta as India was partitioned and granted independence. Visited Delhi and other neighbouring areas to stop rioting and to visit camps for refugees.

1946 onwards: Gandhiji's efforts were concentrated on effecting Hindu-Muslim accord. Hindu-Muslim riots had broken out all over India, ever since the League President Jinnah, rejected the Cabinet Mission Plan and proclaimed August 16, 1946 as Direct Action Day. It was never clarified what Direct Action really involved. But the Muslims responded to this call with vengeance. The great Calcutta killings of August 16/18 were the first bitter harvest of the Direct Action Day, Gandhiji visited many of these areas—Noakhali for instance—to restore communal amity.

1948: Gandhiji undertook a fast for 5 days to bring about communal unity. On January 30, while holding a prayer meeting at Birla House, Delhi, Gandhiji was shot dead by a Hindu fanatic Vinayak N. Godse, who was deadly opposed to Gandhiji's efforts to bring about Hindu-Muslim amity. Thus ended the life of the greatest Indian since The Buddha.

FREEDOM AND AFTER

British Government announced on Feb. 20, 1947 its intention to quit India by June 1948. Lord Mountbatten was name Viceroy to arrange the transfer of power. He assumed office on March 24 and broadcast his plan for a partition of India.

Here is a chronology of events thereafter.

1947: British Parliament passes the India Independence Act (July 1) and fixes Aug. 15 for the transfer of power. Partition of India into India and Pakistan. Power transferred. Lord Mountbatten becomes Governor General of India and Muhammed Ali Jinnah, Governor General of Pakistan (Aug. 15).

1948: Assassination of Mahatma Gandhi (Jan. 30). Death of M.A. Jinnah (Sept. 11). The Government of India occupies the Nizam's Hyderabad State.

1949: Constitution of India adopted by the Constituent Assembly (Nov. 26).

1950: Constitution of India comes into force (Jan. 26). Sardar Patel dies (Dec. 15).

1951: The first general election in India. First Amendment to the Constitution.

1952: Dr. Rajendra Prasad. elected Rashtrapati (Head of State).

1954: Panch Sheel agreement between China and India.

1955: Avadi session of the Indian National Congress adopts a socialistic pattern of society for India.

1956: Life insurance nationalized; States Reorganization Act.

1957: Second General Election. Rajendra Prasad elected for a second term.

1958: Metric system of weights and measures introduced.

1959: Swatantra Party formed.

1960: Bombay bifurcated into Maharashtra and Gujarat States.

1961: India occupies the Portuguese enclaves of Goa, Daman and Diu.

1962: Third general election in India. Dr. Radhakrishnan elected President. Nehru forms the third congress ministry.China attacks India on the northern border (Sept. 19).

1963: Gold Control Order. Rajendra Prasad dies (Feb. 28). Nagaland becomes a state of the Indian Union.

1964: Jawaharlal Nehru dies, (May 27). Lal Bahadur Shastri becomes P.M. Communist Party of India splits into right and left.

1965: Indo-Pakistan war in the Rann of Kutch; Cease-fire in the Rann (June 30).

1966: Tashkent meeting between Lal Bahadur Shastri and Ayub Khan. Agreement reached. Shastri dies at Tashkent (Jan. 11). Indira Gandhi elected Prime Minister (Jan. 19). Dr. Homi J. Bhabha dies in a plane accident. The States of Haryana and Punjab come into being.

1967: Fourth general electioin. Indira Gandhi elected Prime Minister. Dr. Zakir Hussain elected President. Earthquake at Koyna (Maharashtra).

1969: Madras State changes its name to Tamil Nadu. Zakir Hussain dies (May 3). V.V. Giri becomes Acting President. Nationalization of 14 leading banks by Presidential Ordinance(July 19). Giri elected President (Aug. 20). G.S. Pathak Vice President. Cong. party splits. Indira Gandhi forms her own Congress with Jagjivan Ram as President.

1970: Supreme Court holds nationalization of banks illegal. Presidential ordinance revalidates nationalization (Feb. 14). State of Meghalaya comes into being (April 2). Privy purses and special privileges of former Indian rulers abolished. Dr.C.V. Raman dies (Nov. 2).

1971: Himachal Pradesh becomes a State (Jan. 25). K.M. Munshi dies (Feb. 8). Indira Congress wins the mid-term elections for Lok Sabha. Indira Gandhi becomes P.M. General Insurance nationalized (May 13). Pakistan attacks India in the west (Dec. 3). India recognizes Bangladesh. Indian army marches into Bangladesh and joins hands with Mukhti Bahini. Pakistan army in Bangladesh surrenders to the Indian Commander. War ends (Dec. 17).

1972: Manipur, Meghalaya and Tirpura become states. Arunachal Pradesh and Mizoram become Union Territories (Jan. 20). Election to State Assemblies (March). Dacoits of Madhya Pradesh surrender to Jaya Prakash Narain (April). Government of India announces increase of minimum bonus to workers from 4% to 8.33% (Sept. 18). C. Rajagopalachari dies (Dec. 28).

1973: Justice Ajit Nath Ray named Chief Justice of the Supreme Court, superseding the three senior most judges. Justice Shelat, Hegde and Grover resign in protest. Mohan Kumaramangalam, Central Minister, dies in an air crash near Delhi (May 31). Mysore changes its name to Karnataka (Nov. 1). E.V. Ramaswamy Naicker (EVR), founder of the Dravida Kazhakam, dies (Nov. 24).

1974: Jaya Prakash Narayan starts 'Citizens for Democracy' movement. Atomic 'device' exploded at Pokran in Rajasthan (May 18). J.P. Narain leads an agitation for dissolution of the Bihar Assembly. (July 17). Fakhruddin Ali Ahmed elected President (Aug. 20). B.D. Jatti Vice-President. Sucheta Kripalani dies (Dec. 1).

1975: L.N. Mishra, Railway Minister, dies in a bomb blast at Samastipur Railway Station (Jan. 2). India accords recognition to the Palestine Liberation Organization (10). Oil struck in third Bombay High rig (11). J.P.'s 'People's March' to Parliament. India recognizes Sihanouk Government in Cambodia (April 15). Dr. S. Radhakrishnan, former President, dies (17). Indian satellite 'Aryabhatta' launched from a cosmodrome in Soviet Union (19). Sikkim joins Indian Union as the 22nd State (May 16). Farakka Barrage dedicated to nation (21). Prime Minister announces 20-point economic programme (July 1). The RSS, Anand Marg, Jamat-i-Islami and 23 other organizations banned. Parliament approves Conservation of Foreign Exchange and Prevention of Smuggling Activities Act (COFEPOSA). MISA bill approved by the Parliament (Aug. 5). Constitution (39th Amendment) Bill 1975, placing election of the President, the Vice President, the PM and the Speaker of the Lok Sabha beyond the scrutiny of the judiciary, approved by Parliament. Rajya Sabha adopts Constitution (41st Amendment) bill extending immunity from criminal and civil proceedings to the Prime Minister. Calcutta and Madras on TV map of India (Sept. 26). K. Kamaraj dies (2). 'Bonded' labour abolished by Ordinance (24). D.K. Barooah elected Congress President (Dec. 29).

1976: Baliram Bhagat elected Lok Sabha Speaker (Jan. 6). President suspends seven freedoms guaranteed by Article 19 of the Constitution (8). Burmah Shell nationalized, becomes Bharat Refineries (24). Lok Sabha's life extended by one year (Feb. 4). Urban Ceilings Act comes into force (17). 89 killed in IA plane crash at Bombay airport (Oct. 12). Lok Sabha passes the 42nd Constitution Amendment Bill making India a Socialist Secular Republic and laying down fundamental duties for citizens (Nov. 2). Lok Sabha votes to extend its own life by another year (5).

1977: The President dissolves Lok Sabha (Jan. 18).

Government relaxes rules of Emergency to permit normal political activity and electioneering (Feb. 3); President Fakhruddin Ali Ahmed passes away; B.D. Jatti sworn in Acting President (11).

Internal Emergency promulgated on June 25, 1975 withdrawn (Mar. 21). Janata and its allies gain absolute majority in Lok Sabha. Indira Gandhi resigns (22). Ban on RSS and 26 other organizations lifted. A.K. Gopalan, Marxist leader, dies in Trivandrum. Morarji Desai elected leader of Janatha Party and sworn in Prime Minister (24). Sanjiva Reddy elected Speaker of the Lok Sabha. Government revokes the external emergency promulgated on December 3, 1971 (27).

Nine Congress-ruled States placed under President's rule. Janatha Party formed (Apr. 30).

Chandra Shekar chosen President of the Janatha Party (May 5).

K. Brahmananda Reddi elected President of the Indian National Congress. The Election commission recognizes the Janatha Party as a National Party (June 3).

Sanjiva Reddi elected (unopposed) President of India. K.S. Hegde unanimously elected Lok Sabha Speaker (July 21).

The Planning Commission decides to introduce Rolling Plan concept (Sept. 10).

Indira Gandhi arrested and released unconditionally. The External Affairs Minister A.B. Vajpayee addresses UN General Assembly in Hindi (Nov. 5).

1978: Currency notes of the denominations of Rs. 1,000, Rs. 5,000 and Rs. 10,000 are demonetised. (Jan. 16).

The Indian National Congress (I) recognized as a national party and allotted the election symbol "hand" (Feb. 2).

Justic Y.V. Chandrachud is sworn in as the Chief Justice of India. Swaran Singh is elected Congress President (Mar. 1).

The Karakoram Highway, linking Gilgit in Pakistan-occupied Kashmir with Sinkiang in China, is opened (June 18).

The Lok Sabha expels Mrs. Indira Gandhi, former Prime Minister, from the House and sentences her to imprisonment for a term lasting until its prorogation (Dec. 19). Indira Gandhi is released from jail (26).

1979: Rohini-200, first monsoon experimental rocket, launched from Thumba (Jan. 6).

The Cellular Jail in Andaman and Nicobar declared a national memorial (Feb. 11).

Soviets launch India's second satellite "Bhaskara" (June 3).

Morarji Desai resigns as Prime Minister (July 15). Jagjivan Ram elected Janata parliamentary party leader. Charan Singh is Prime Minister heading Janatha (S)-Congress coalition and Jagjivan Ram is leader of the opposition in the Lok Sabha (17).

Damburst floods Morvi and Lilapur in Gujarat. Over 1000 dead (Aug. 12). President dissolves Parliament, orders year-end general elections and asks Charan Singh to head a caretaker government (21). M. Hidayatullah, consensus choice of political parties, as Vice-President of India (31).

Operation (Milk) Flood-II launched (Oct. 2). Jaya Prakash Narayan dies (8). Supreme Court stays the execution of all death sentences. Mother Teresa awarded Nobel Peace Prize (17).

THE TURBULENT EIGHTIES

1980: Indira Gandhi's Congress (I) wins two-thirds majority in the new Lok Sabha (Jan. 10). Mrs. Gandhi's new Ministry at centre sworn in (14); Assam agitation turns violent; Army called out (18); Assembly elections in Kerala; Left Democratic Front wins absolute majority (21); Bal Ram Jakhar elected Lok Sabha Speaker (22). E. K. Nayanar forms Government in Kerala (24); Mother Teresa awarded Bharat Ratna (30).

President's rule in Tamil Nadu, Maharashtra, U.P., Bihar, Orissa, M.P., Rajasthan, Punjab and Gujarat (Feb. 17); Prakash Padukone becomes the first Indian to win All-England Badminton Championship (23), Raj Narain expelled from Lok Dal forms Janata (S) Party (Apr. 2); Janata Party splits again; members with RSS links form Bharatiya Janata Party with A. B. Vajpayee as President (6). Six more private sector banks nationalized (15); Baba Gurbachan Singh, Nirankari Chief, assassinated; son named new chief (24).

Supreme Court rules Parliament has no unlimited power to amend constitution; court also upholds validity of death sentence (May 9).

AIADMK wins Tamil Nadu Assembly election;

Congress (I) wins in U.P., M.P., Gujarat, Rajasthan, Punjab, Maharashtra and Orissa (June 1). M. G. Ramachandran's second AIADMK Ministry takes office (9); Sanjay Gandhi appointed Congress General Secretary (13); Sanjay dies in a plane crash in New Delhi (23). Former President V. V. Giri passes away (24).

Congress (I) gets absolute majority in Rajya Sabha (July 12). India's SLV-3 Rocket puts Rohini satellite in orbit (18). India regains Olympic hockey title (29).

Second Commonwealth Regional Heads of Government Conference in New Delhi (Sep. 4), Centre nationalizes Maruti company (14).

Soviet President Leonid Brezhnev visits New Delhi (Dec. 8).

1981: Central Government offers full statehood to Mizoram (Jan.17).

Vayudoot the third airline inaugurated (26).

Sixty-one die in circus fire in Bangalore (Feb. 7).

APPLE, India's first geostationary experimental telecommunications satellite launched into orbit from Kourou, French Guiana. Air Marshal Dilbagh Singh is appointed Chief of Air Staff (June 24); President's rule imposed in Assam (30).

Jagjivan Ram heads breakaway Congress (U) and calls new party Congress (J) (Aug. 5); Mr. Sharad Pawar, Maharashtra leader, elected President of Congress (U) (25).

A batch of 18 members of a pilgrim party leaves for Kailas and Manasarovar in Tibet—the first batch to go there in 20 years (Sept. 9); Oil struck in offshore well in the Cauvery basin (25); Five Khalistan activists hijack Indian Airlines Boeing 737 to Pakistan with 117 passengers; 66 freed on arrival in Lahore (29); Pakistan Commandos overpower the five hijackers (30).

Activists of the Dal Khalsa who masterminded the hijacking of Indian Airlines plane arrested (Oct. 1). Twenty-one-month-old Left United Front Ministry led by Mr. E. K. Nayanar, resigns in Kerala (20). Kerala under central rule (21).

IMF board clears 5 billion SDR loan for India (Nov. 10); 'Bhaskara' is launched from Soviet Cosmodrome (20); Air India plane hijacked from Seychelles; crew and passengers freed in Durban.

Madras-Penang undersea cable commissioned. New Government led by the Congress(I) leader Karunakaran, installed in Kerala (Dec. 28).

1982: 21-member Indian team lands on Antarctica (Jan. 14). Bombay High Court finds allegations against the Chief Minister A. R. Antulay justified. Antulay resigns. Mizo National Front and allied organizations declared illegal (19).

President's rule in Kerala (Mar. 17). President's rule in Assam; Acharya J. B. Kripalani (94) dies (19); N. T. Rama Rao forms Telugu Desam party in Andhra Pradesh (21).

INSAT-1A placed in orbit; Snag detected (Apr. 10).

Karnataka Kranti Ranga led by Devaraj Urs comes into being (May 10). Elections for Assemblies held in West Bengal, Haryana, Himachal Pradesh and Kerala (19). Naval Academy at Ezhimala, Kerala, approved by Union Cabinet (29).

19 persons killed and 25 injured when an Air India Boeing 707 from Singapore via Madras crash at Bombay (June 22).

MGR inaugurates Tamil Nadu's noon meal programme for poor children (July 1). Mira Behn (90), disciple of Mahatma Gandhi, dies (20). Zail Singh sworn in President (25).

Arun Shourie, named for the 1982 Magsaysay Award for journalism, literature and creative communication arts (Aug. 12). Investment of Rs. 269 crore with a foreign exchange component of Rs. 89 crore, approved for the Maruti project in collaboration with Suzuki Motor Company of Japan (17).

Jammu and Kashmir Chief Minister Sheikh Abdullah (77) dies (Sept. 7). Indian Air Force celebrates 50 years (Oct. 8). Gandhiji's private secretary Pyare Lal dies (27).

Gen. Zia-ul-Haq of Pakistan visits New Delhi. Agreement to set up a Joint Commission (Nov. 4). Acharya Vinobha Bhave (88) dies (15).

1983: Telugu Desam swept to power in Andhra Pradesh; Bharat Ratna awarded to the late Acharya Vinoba Bhave (Jan. 25).

One-man commission, headed by retired Mr. Justice R. S. Sarkaria appointed to go into Centre-State relations (Mar. 24).

Richard Attenborough's "Gandhi" wins 8 Oscars (Apr. 12). SLV-3 launched. Rohini put in orbit (17).

First 235 MW unit of nuclear power station at Kalpakkam goes critical (July 2).

INSAT-1B runs into snag, its solar array fails to deploy fully (Sept. 4). Supreme Court upholds execution of criminals through hanging by rope (23).

The Union Government takes over management of 13 textile undertakings in Bombay; marathon strike in cotton textile industry ends (Oct. 19). The Union Government reduces the upper age limit for the Civil Service examinations from 28 to 26 (22).

INS Godavari, first frigate fully designed by Indian Navy and built at Mazgaon, commissioned (Dec. 10). Third Indian expedition lands on Antarctica (27).

1984: Mother Teresa University inaugurated by Mother herself at Kodaikanal, T. Nadu (Mar. 2). Chandra Sekhar elected President of Janata Party for a third term (6). Controversial Bihar press Bill withdrawn (7).

Squadron leader Rakesh Sharma becomes India's first spaceman, when he is launched aboard Soyuz T-11 of Soviet Union (Apr. 5). Kerala Government drops Silent Valley Project and declares the entire area a national park (13).

Phu Dorjee conquers Mount Everest without oxygen (May 9). Ramesh Chandra Chopra, editor-in-chief of the *Hind Samachar* group of newspapers shot dead by extremists in Punjab; Miss Bachendri Pal becomes the first Indian woman to conquer Mount Everest (23).

Army takes control in Punjab to stem terrorist violence. The State declared a restricted area under the Foreigners Act (June 2). Operation Blue Star: Jarnail Singh Bhindranwale and over 325 killed (5); Violence in Delhi, Srinagar (7).

IA Airbus hijacked, lands in Lahore (5). White Paper on Punjab released by Union Government (July 10). Terrorists breach Bhakra canal in Punjab (21).

Bomb explosion at Meenambakkam Airport kills 32 (Aug. 2). R. Venkataraman elected eighth Vice-President of India (22). Indian Airlines Boeing 737 with 68 passengers and a crew of 6 hijacked to Lahore; The twelve Sikh hijackers surrender to authorities in the UAE and release all 68 passengers (26).

Army withdraws from the Golden Temple; Repair of the Akal Takht complete (Sept. 25). President Giani Zail Singh is exonerated by Sikh high priests (26).

Unilateral ceasefire by Mizo rebels ordered by Laldenga (Oct. 2). New party called Dalit Mazdoor Kisan party formed under the leadership of Charan Singh (21). Indira Gandhi assassinated by two of her own security guards at her residence in Delhi. Rajiv Gandhi sworn in Prime Minister (Oct. 31).

Violence following Mrs. Gandhi's assassination takes heavy toll (Nov. 2). Rajiv Gandhi elected Congress(I) President (12). Y. B. Chavan (71), former Deputy Prime Minister, dies (25).

2,500 persons killed and 2,000 badly affected when they inhaled poisonous gas escaping from an insecticide plant in Bhopal (Dec. 3). Justice Thakkar Commission appointed to enquire into the assassination of Indira Gandhi (10); First MiG 27 M aircraft assembled by HAL takes off (14). Indian supertanker "Kanchenjunga" hit in the Gulf (25). Congress(I) sweeps Lok Sabha elections (28).

1985: Doordarshan starts Malayalam telecast from Trivandrum (Jan. 1). Balram Jakhar unanimously elected Speaker of the Lok Sabha (16). Spy ring cracked. Top Government officials, businessmen held (18). Dr. P. C. Alexander, principal secretary to the PM quits following the arrest of three aides in an espionage case (19). Anti-defection bill passed by the Lok Sabha (30).

Mohammad Azharuddin becomes the first man in cricket history to hit a century in each of his first three tests (Feb. 1). A fire on M.V. Chidambaram, an Indian liner sailing from Singapore to Madras, kills 34 (12). Dr. Nagendra Singh elected world court chief (14).

Rajendra Sethia, the biggest personal bankrupt ever, arrested in New Delhi (March 1). Ravi Shastri is declared champion of champions and Sunil Gavaskar steps down from the captaincy (10).

Mauritian Prime Minister Aneerood Jugnauth visits Delhi (April 2). Bombay wins the Ranji Trophy for the 30th time, beating Delhi by 90 runs in the golden jubilee year of the national cricket championship (6). Full diplomatic status for SWAPO representative in New Delhi (19).

Adoor Gopalakrishnan adjudged Best Director (Mukhamukham) in national film awards (May 7). P. N. Bhagawati appointed Chief Justice of the Supreme Court (10). Dr. P. C. Alexander appointed High Commissioner in Britain (18).

Central Government offices switch to 5-day week (June 3). Festival of India opens in Paris (12). The Medal of Freedom, America's highest civilian decoration, presented to Mother Teresa by President Ronald Reagan (20). All 329 persons on board are killed as an Air-India Boeing 747 from Toronto to Bombay crashes into the North Atlantic (23).

Sri Lanka Peace Talks open in Thimphu (July 8). Prime Minister Rajiv Gandhi and Akali Dal president Sant Harchand Singh Longowal sign an agreement ending the four-year agitation in Punjab (24). Congress(I) M.P. Lalit Maken, his wife and a visitor at their residence in Delhi shot dead by terrorists (31).

Ramon Magsaysay award for public service goes to Baba Amte (Aug. 3). Geet Sethi of India wins the world amateur billiards championships (7). Accord reached on the Assam foreign nationals issue, agitation called off (15). Assam Assembly dissolved (18). Akali Dal president Sant Harchand Singh Longowal shot (20).

Development officer Jawahar Deholakia of the Rajkot branch of the LIC enters the Guinness Book of World Records for having secured over Rs. 1 crore worth of business for the 17th year in succession (Sept. 1).

Morocco breaks diplomatic relations with India after New Delhi announced its recognition of the Saharwi Arab Democratic Republic (October 3); Rajiv Gandhi, in New York for the 40th anniversary of the United Nations (23). Athletes P. T. Usha and Shiny Abraham win Arjuna Awards (24).

Rajiv Gandhi dedicates to the nation the Dhruva research reactor at the Bhabha Atomic Research Centre (Nov. 11). Doordarshan begins teletex service (14).

Rajiv Gandhi joins the leaders of Greece, Sweden, Tanzania, Mexico and Argentina in a teleconference as part of the UN ceremony at which they are honoured with the 'Beyond War award' (Dec. 14). Rajiv Gandhi and Pakistan President Zia-ul-Haq meet in Delhi and agree not to attack nuclear plants in each other's country. In Bombay the Congress(I) celebrates the 100th anniversary of the founding of the Indian National Congress (26).

1986: Pakistan decides to lift 8-year-old ban on private trade with India (Jan. 10); Union Government declares Ladakh a Scheduled Tribe area under a constitutional amendment order by the President, applying article 342 for the first time to Jammu and Kashmir; MiG-27, inducted into Indian Air Force (11); Two women—Saudamini Deshmukh and Nivedita Bhasin pilot an IA Fokker plane from Silchar to Calcutta creating history (13); General K. M. Kariappa, the first Commander-in-Chief of the Indian Army made Field Marshall (14). Satwant Singh, Balbir Singh and Kehar Singh sentenced to death for the murder of former Prime Minister, Indira Gandhi (22).

Pope John Paul II arrives in New Delhi for a 10 day visit to the country (Feb. 1). Goa connected to Air India's International network when its Airbus, arrives from Kuwait (2); Two Indians Fr. Chavara Kuriakose Elias and Sister Alphonsa raised to the 'blessed rank' by Pope John Paul II at a function in Kottayam, Kerala (8). Renowned philosopher, J. Krishna Murthy (90) dies at Ojal in California (17).

L.K. Advani elected President of B.J.P. (Mar. 8); India finally decides to buy 21 Westland Helicopters from Britain (14); Internationally wanted criminal Charles Sobharaj and 6 other prisoners escape from Tihar Jail, New Delhi (16); C. Rajeswara Rao (74), re-elected General Secretary of the Communist Party of India (18).

Central Government announces excise benefits for small units: A new panel—Justice Venkataramaiah Commission—appointed to determine the Hindi speaking areas in Punjab to be given to Haryana in lieu of Chandigarh (Apr. 3). International criminal Charles Sobharaj and David Hall, his associate, nabbed at Mapusa in Goa (7). 'University of Health Sciences,' the first Medical University in the country, inaugurated in Vijayawada (8). New national education policy unveiled in Parliament. France Albert Rene, the President of Seychelles, arrives for a 6-day visit to India (21); Congress (I) expels former Union Minister, Pranab Kumar Mukherjee from party for 6 years (27). Malayalam Film 'Chidambaram' directed by G. Aravindan wins best feature film award and Shyam Benegal bags the Best Director award for the Hindi film 'Trikal' (28). Five-member Panthic Committee announces formation of 'Khalistan' (29). Chandra Sekhar re-elected President of Janata Party for the tenth year in succession (30).

Controversial Muslim Women Bill passed by Lok Sabha (May 5); Tenzing Norgay, (72) who scaled the Everest first with Edmund Hillary 33 years ago, dies at Darjeeling (9). V. Shantaram, 75, chosen for the Dada Saheb Phalke award (16). The first ever embassy of SWAPO (South West African People's Organization) opened in New Delhi by its President Sam Nujoma (24).

First AIDS death reported from a private hospital in Bombay, the victim being a businessman who received blood transfusion for a bypass heart surgery in 1980 (9). Union Government sanctions maternity leave for unmarried women employees too. Accord with Mizo National Front, Laldenga to be Chief Minister; Congress (I) wins 30 seats out of 45 in Rajya Sabha poll (28).

Increase in the interest rate on the Employees Provident Fund from 10.15 per cent to 11 per cent (July 3). Jagjivan Ram, 78, passes away (6). India protests against China's intrusion of six to seven km into the Indian territory in Arunachal Pradesh (15). Government bans administering aspirin to children below 12 years of age (18). India withdraws from Edinburgh Commonwealth Games (20). The Supreme Court orders all-India test for medical seats. Army called out in Kalimpong in Darjeeling district as the Gorkha National Liberation Front sponsored agitation for 'Gorkhaland' takes a violent turn (27).

Amnesty scheme for evaders of taxes announced (Aug. 1). Lok Sabha passes constitution 53rd Amendment bill conferring statehood on Mizoram. The first wholly Indian test-tube baby born to 23-year old Mrs. Shyamji Chawda, at the KEM hospital, Bombay (7). Gen. A.S. Vaidya who was Chief of Army Staff at the time of 'Operation Blue Star' shot dead at Pune (10). Singing National Anthem is not obligatory—rules Supreme Court in the 'Jehovah's Witnesses' case. Kathmandu selected to locate the Secretariat of the SAARC (17). A restructured 20-point programme announced (20). Nine-member Cong-MNF coalitioin ministry headed by the MNF President Laldenga sworn in Aizawl (21).

LIC announces three new schemes and cut premium on its 30th anniversary celebrations (Sept. 1). Dr. Verghese Kurien wins 1986 Carnegie Peace Prize (3). Union Government files compensation case against Union Carbide Corporation of America in Bhopal Court (5). President's rule imposed in J & K for 6 months (6). Ratan Tata and Rahul Bajaj appointed Chairmen of Air India and Indian Airlines boards respectively (19). P.T. Usha, India's sprint queen, wins the first gold for India in Seoul Asiad (30).

Swami Ranganathananda of Ramakrishna Mission chosen for the Indira Gandhi Award for National Integration (Oct. 1). Rajiv Gandhi escapes attempt on life at Rajghat ceremony (2). Foundation laid for 'Seabird' South Asia's biggest naval-base at Karwar in Karnataka (24).

Soviet leader Gorbachev arrives in New Delhi on a four-day official visit (Nov. 24). Telecom, postal rates hiked (28). Sharad Pawar group of Congress (S) decides to join Congress (I) (29).

The eighth World Congress of International Economic Association opens in New Delhi (Dec. 1). Lok Sabha passes Constitution 55th Amendment Bill conferring full statehood on Arunachal Pradesh. Parliament passes the Consumer Protection Bill and seven other related bills (10). The Vice President R. Venkataraman inaugurates the 400th anniversary celebrations of Narayaneeyam by Melpathur Bhattathiri at Guruvayur (13).

THE YEAR OF BOFORS, FAIRFAX

1987: An International Conference to commemorate the 75th Anniversary of the African National Congress opens in New Delhi (Jan. 8). Indian yacht 'Trishna', returns to Bombay after a world odyssey of 30,000 nautical miles (10). 'Prostitute' redefined to include males, under the Immoral Traffic (Prevention) Act (23). P. T. Usha nominated the Asian Athlete of 1986 by the US Sports Academy (USA) (27).

National Anthem singing made compulsory in Kerala Schools (Feb. 4). Arunachal Pradesh becomes the 24th state of India; Lokdal splits over leadership issue (20). The Railway Minister announces introduction of 8 superfast trains from April 1 (25).

Sunil Gavaskar scores his 10,000 runs in cricket at Ahmedabad and becomes the first batsman to make 10,000 runs (Mar. 7). India's first new generation rocket, ASLV, plunges within two minutes and 40 seconds of its launching (24). In Kerala and West Bengal Marxist-led alliance gets majority in election. In Jammu & Kashmir, National Conference—Congress alliance wins (25).

Indian Standards Institute becomes Bureau of Indian Standards (Apr. 2). Justice Thakkar to head Fiarfax probe (6). Supreme Court holds that all wives including Muslim women whose husbands have either married again or taken a mistress are entitled to maintenance, in a case filed by Saira Banu of Kerala (7). V. P. Singh resigns as Defence Minister, K. C. Pant appointed in his place (12). Supreme Court in a judgement confers Hindu widows absolute ownership of property under Hindu Succession Act 1956 (23).

INSAT-1B successfully completes 1000 days of continuous operations in space (May 7). President's rule imposed in Punjab (11). Britain's HMS Hermes becomes Indian Navy's second aircraft carrier named INS Viraat (12). Former Prime Minister Charan Singh (85) dies (29). Goa becomes the 25th state of India, Daman and Diu to remain as union territory (30).

A Swedish Government enquiry finds that Bofors paid commission to middlemen for concluding arms purchase agreement with India (June 4). Prime Minister Rajiv Gandhi rules out termination of Rs. 1700 crore Bofors gun deal (14).

Congress President Rajiv Gandhi expels V. C. Shukla, Arif Mohammed Khan and Arun Nehru from Congress for anti-party activities (July 15). V. P, Singh, former Finance Minister, announces resignation from Congress; R. Venkataraman elected President with massive majority (17); Amitab Bachhan resigns his Lok Sabha membership; Arun Singh, union minister of state for defence, resigns from the cabinet (18). Congress President Rajiv Gandhi expels V. P. Singh from Congress and orders probe into Ajitab Bachhan's property abroad (19).

Geet Sethi retains the World Amateur Billiards title; Vishwanathan Anand becomes the first Asian to win the World Junior Chess championship Aug. 2). Bharat Ratna awarded to Frontier Gandhi Khan Abdul Ghaffer Khan (14). S. D. Sharma elected Vice-president of India (21). B. Shankaranand appointed Chairman of the Parliamentary Committee to enquire into the Bofors gun deal (27).

In Rajasthan, Roop Kanwar, 18 year old girl, commits sati by burning herself in her husband's funeral pyre (Sept. 4).

In Bombay's KEM Hospital three more test-tube babies are born. India signs terrorism treaty at the SAARC meeting in Kathmandu (Nov. 4). Lok Sabha agrees to the extension of President's rule in Punjab (9). Congress gets absolute majority in Nagaland elections (20).

MiG-29, re-christened 'Baaz', inducted into the Indian Air Force (Dec. 6). Thakkar-Natarajan Commission report finds grave administrative lapses by the Finance minister in engaging Fairfax Group Inc. of the US to investigate the economic offences by certain companies (9). Rajiv Government defeats the firstever no-confidence motion (11). Bhopal court orders the Union Carbide to pay Rs. 350 crore as interim relief to 1984 gas victims (17). M. G. Ramachandran, 70, Tamil Nadu's actor–Chief Minister dies (24).

1988: Mrs. Janaki Ramachandran sworn in as Chief Minister of Tamil Nadu (Jan. 7). Economist, administrator and diplomat, L. K. Jha, dies of cardiac arrest (16). Frontier Gandhi, Khan Abdul Ghaffar Khan, dies; Shiv Charan Mathur sworn in as Chief Minister of Rajasthan (20). 'Bharat Ratna', conferred posthumously on former Tamil Nadu Chief Minister, M. G. Ramachandran (25).

Punjab Assembly dissolved by a Presidential order (Mar. 6). Re-enactment of Dandi march near Chandola, in Gujarat (12). India's first remote-sensing satellite, IRS-IA, launched (17).

Madhya Pradesh High Court directs Union Carbide Corporation to pay Rs. 250 crore as 'interim compensation' to victims of Bhopal gas leak disaster (Apr. 4). Raj Kapoor gets Dada Saheb Phalke award for 1988 (31).

Gen. N. V. Sharma takes over from Gen.

K. Sunderji as Chief of Army Staff (May 1).

V. P. Singh defeats Congress rival, Sunil Shastri in Allahabad Lok Sabha election (June 18).

More than 100 people killed and several injured as Bangalore–Trivandrum Island Express jumps the rails and falls into Ashtamudi lake at Perumon in Quilon district in Kerala (July 8). GNLF accepts Darjeeling Hill Council plan (10). ASLV-D2, launched from Sriharikota, plunges into the Bay of Bengal (13). INSAT-1C launched (22). National badminton champion, Syed Modi, shot dead (28). Lt. Governor of Delhi, H. L. Kapur, sacked following cholera and gastro-enteritis deaths in the capital (29).

In Indira Gandhi murder case, Supreme Court confirms death sentence on Satwant Singh and Kehar Singh (Aug. 2). Seven opposition parties form National People's Front (Rashtriya Morcha) (6). N. T. Rama Rao elected Chairman and V. P. Singh, Convenor of the National Front (7). Ramakrishna Hegde resigns as Chief Minister of Karnataka on moral grounds in connection with phone tapping issue (10). S. R. Bommai elected Karnataka Chief Minister (12). GNLF signs accord with Centre and West Bengal on formation of an elective Hill Council for Darjeeling (22).

A day without newspapers in the country as the result of a protest by the entire newspaper industry, against Defamation Bill (Sept. 5). President's rule in Mizoram (7). Prime Minister announces Government's decision to drop Defamation Bill (22).

Janata Dal, the new national centrist opposition party, launched; V. P. Singh elected President (Oct. 11).

Lok Dal splits, H. N. Bahuguna expelled and Devi Lal elected to replace him (Nov. 4). India gives full recognition to the state of Palestine (16). Soviet leader, Mikhail Gorbachev, arrives in Delhi on a 3-day visit (18). Baba Amte wins U.N. Human Rights Award (22).

Dr. Nagendra Singh, 74, President of the International Court of Justice, dies in the Hague (Dec. 11). Landslide victory for GNLF in Darjeeling Gorkha Hill Council elections (15). Rajiv Gandhi leaves on an official visit to China—the first visit to China in 34 years by an indian Prime Minister (18). The Constitution (62nd Amendment) Bill for reducing the voting age from 21 to 18 years receives Parliamentary approval (20). The eighth Indian Scientific Expedition lands on Antarctica.

OPPOSITION GAINS POWER

1989: India and Pakistan sign three agreements; The 4th annual SAARC summit concludes in Islamabad (Jan. 1); Satwant Singh (24) and Kehar Singh (54), executed for the murder of Indira Gandhi (6); 12th International Film Festival of India opens at New Delhi (10). 'Poorna Kumbh', India's largest religious gathering, once in 12 years, begins at Allahabad (14). Prem Nazir (59), hero of more than 620 Malayalam films, dies (16). Vimal Kumar, becomes the new National Badminton champion and Madhumita Bisht retains her women's crown (21). DMK swept to power in Tamil Nadu Assembly election; Bihar Governor, Govind Narain Singh, resigns'. Pakistan retains Indira Gandhi International Hockey Gold Cup (22); Madhya Pradesh Chief Minister Arjun Singh resigns on Churhat lottery case grounds (23); National Bravery Awards presented to 26 children (24). In Nagaland, Congress-I Ministry headed by S. C. Jamir assumes office; Motilal Vora sworn in as Chief Minister of Madhya Pradesh; Ustad Ali Akbar Khan, Dr. M. S. Swaminathan and Uma Shankar Dikshit awarded Padma Vibhushan (25). M. Karunanidhi sworn in as DMK Chief Minister in Tamil Nadu (27). North Zone retains Deodhar Trophy; India decides tc organise the first Afro-Asian Games in 1991 (28).

French President Francois Mitterrand visits India (Feb. 1). France's highest civilian award, 'Legion d' Honour—conferred upon Satyajit Ray by President Mitterrand at Calcutta (2); Hungary beats Soviet Union (2-0) in final of Nehru Gold Cup Football tournament; Festival of France opens in Bombay (4); Mrs. Gro Harlem Brundtland, Prime Minister of Norway, awarded 1988 Indira Gandhi Prize for Peace, Disarmament and Development (8). Actor-Director Sanjay Khan critically injured in a fire accident in a Mysore Studio while shooting the TV serial 'Tippu Sultan'; Australian Prime Minister Bob Hawke visits New Delhi (9); Manmeet Singh & Rinku Gupta win men's and women's trophies respectively in National Table Tennis championship; Renowned writer Aubrey Menen (76), dies in Kerala (13); Supreme Court orders Union Carbide to pay $470 million (about Rs. 715 crore), in "full and final settlement" of all claims out of the Bhopal Gas tragedy (14); Five new Governors appointed; Sarla Grewal becomes Governor of Madhya Pradesh (19); UN Secretary General, Perez de Cuellar, receives the Jawaharlal Nehru Award for International Understanding from President R. Venkataraman (27); Finance Minister S. B. Chavan presents a Rs. 7337 crore deficit budget for 1989-90 (28).

Vasantrao Patil, former Chief Minister of Maharashtra and Governor of Rajasthan, dies; Quarter-milers Vandana Rao and Vandana Shanbhag figure among the 15 who are conferred with Arjuna Award (Mar. 1); Bihar Chief Minister Bhagwat Jha Azad resigns (5); Yasser Arafat, PLO Chairman, arrives on a two-day state visit to India)9); In Bihar, a 13-member ministry headed by Satyendra Narain Sinha, MP, sworn in; Marathi poet V. V. Shirwadkhar gets Jnanpith Award (11); H. N. Bahuguna, president of Lok Dal (B) and former Union Minister, dies (17); Delhi regains Wills Trophy Cricket title (18); Subhash Agarwal defeats the world and defending national champion Geet Sethi to win national Billiards crown (21); Eighth Antarctica Expedition returns after erecting India's second permanent manned station, "Maitri", in a record time of 40 days; Delhi regains Ranji Trophy Cricket title (26); Thai Prime Minister Gen. Chatichai Choonhavan visits India (28).

Socialist leader S. M. Joshi dies; Bengal regains Santosh Trophy beating Kerala (April 1); Dr. George Vassiliou, President of Cyprus, arrives in New Delhi (11); Malayalam film "Piravi" directed by Shaji N. Karun adjudged best feature film of 1988 (13); Cine actor Ashok Kumar gets Dada Saheb Phalke Award for 1988 (14); Chief Justice of India, R. S. Pathak, elected to the World Court; Launching of IRBM 'Agni' fails (20); President's rule imposed in Karnataka (21); Salgaocar from Goa retains Federation Cup Football title (23); Hardeo Joshi appointed Governor of Assam and Meghalaya (28).

National Kabaddi Champion S. Laxman Yerunkar murdered (May 2); West Indians make a clean sweep of India-West Indies series, tests (3-0) and one-day internationals (5-0) (3); Naval H. Tata, industrialist, dies (5); IRBM 'Agni' launched successfully from Chandipur, Orissa (22); Former Union Minister S. K. Dey dies (24); Union Communications Minister Vir Bahadur Singh dies (30); Eminent broadcaster Melville de Mellow dies (June 4); Justice E. S. Venkataramiah, seniormost judge of Supreme Court, appointed new Chief Justice of India (17); India and Pakistan decide to end the five-year-old confrontation in Siachen Glacier area by redeploying their forces (18); Dr. (Mrs.) Madhuri Shah, former U.G.C. Chairman, dies (29).

New Governors appointed in five states—Gen. K. V. Krishna Rao for Jammu & Kashmir (July 1); Union Deputy Ministers promoted to the rank of Ministers of State; Capt. W. A. Sangma appointed Governor of Mizoram and A. A. Rahim, Governor of Meghalaya (4); Rajiv Gandhi holds talks with Soviet President Mikhail Gorbachev in Moscow; India's Yasin Merchant wins Asian Snooker title (15); Rajiv Gandhi arrives in Pakistan for the first official visit by an Indian Prime Minister in 30 years (16); A majority of opposition members in Lok Sabha resign on the issue of C & AG report on Bofors gun deal (24); Former J & K Minister Mufti Mohammad Sayeed disqualified from Rajya Sabha, in the first case of such disqualification from the House under anti-defection law (28); Over 600 IPKF troops set sail for India from Trincomalee as part of the resumed withdrawal (29).

Reliance executive Kirti Vrajlal Ambani held in connection with a plot to kill Bombay Dyeing Chairman Nusli Wadia (Aug. 1); Bombay lifts Rangaswamy National Hockey Cup (5); Six top Cricket stars banned for one year from all cricket activities on the issue of American tour (6); Judy Walia of Karnataka wins the first National Women's Snooker title; Lok Sabha passes Panchayati Raj and Nagarpalika Bills (10); Champakulam Chundan bags Nehru Trophy in Snake Boat race at Alleppey, Kerala (12); Veteran Hindustani musician Krishnarao Shankar Pandit (97), dies (22); Opposition parties organise one-day Bharat Bandh (30).

Yasser Arafat chosen for the 1988 Jawaharlal Nehru Award for International Understanding (Sep. 1); One-year ban and fine imposed on six leading Indian test cricketers lifted (14); Dr. C. N. Reddy, Vice-Chancellor of Telugu University, Hyderabad, selected for Jnanpith Award for 1988 (15); An all-women crew creates Asian history by flying an Indian Airlines Boeing 737 from Bombay to Goa and back (16); Nehru Centenary International Athletic Meet opens in New Delhi (19); IPKF suspends its operations against LTTE and LTTE in turn ceases all operations against the Indian armed forces (20); Spiritual Head of Sringeri Sarada Mutt, Sri Jagadguru Abhinava Vidya Theertha Swami, dies (21); The second test launching of India's surface-to-surface missile, 'Prithvi', from Sri Harikota successful; Noted singer and music director Hemanta Kumar Mukherjee dies (27); Krishnamachari Srikkanth named India's new Cricket Captain; North Zone wins Deodhar Trophy limited overs Cricket title. INS Shalki, India's first indigenously built submarine, launched in Bombay (30).

M. Fatima Beevi, former High Court judge from Kerala, named the first woman judge of the Supreme Court (Oct. 5); Dr. N. V. Krishna Warrier, eminent scholar, literateur and journalist of Kerala, dies; President's rule extended in Karnataka and Punjab (12); Government's Panchayati Raj and Nagarpalika Bills defeated in Rajya Sabha (13); Ninth Lok Sabha elections and Assembly elections for 3 states on November 22, 24 and 26 announced (17); Assembly poll for Karnataka and U.P. announced (18); Sukhdev Singh alias Sukha and Harminder Singh alias Jinda sentenced to death for the murder of former Army Chief Gen. A. K. Vaidya (21).

A woman in Bombay gives birth to test-tube quadruplets (Nov. 5); Delhi lifts Irani Cricket Trophy (7); Foundation stone laid for the Ram Janambhoomi temple at Ayodhya (U.P.); Esteghlal club from Iran wins DCM football title (10); 71 miners trapped in a coal mine subsidence at Raniganj, West Bengal (13); Eighth Asian Track and Field Meet opens at Jawaharlal Nehru Stadium in New Delhi (14); 66 out of 71 trapped miners at Raniganj, rescued (16); Asian Track and Field Meet ends. China leads the medal tally with 43 medals; P. T. Usha wins 4 gold and 2 silver for India (19); Poll for 9th Lok Sabha and Assembly elections in 5 states opens (22); Poll results; anti-Congress wave in North; South India favours Congress (26); President dissolves 8th Lok Sabha (27); Congress (I) emerges largest party in Lok Sabha by winning 193 seats, Janata Dal-141, BJP-88 and CPM-32; Congress (I) rule in Karnataka, Veerendra Patil made Chief Minister (30).

National Front decides to form government with the outside support of BJP and the Left Parties; Dr. Chenna Reddi (Congress-I) becomes Chief Minister of Andhra Pradesh; A 13-member Sikkim Sangram Parishad Ministry headed by Nar Bahadur Bhandari assumes office in Sikkim (Dec. 1); Vishwanath Pratap Singh, Janata Dal leader sworn in as India's seventh Prime Minister; Om Prakash Chauthala is the new Chief Minister of Haryana (2); Mulayam Singh Yadav named U.P. Chief Minister (3); Hardeo Joshi replaces Shiv Charan Mathur as Chief Minister of Rajasthan (4); Union Cabinet formed: V. P. Singh takes defence and Mufti Mohammad Sayeed, home affairs (6); V. P. Singh welcomed by large crowds at Amritsar; N. K. Mukherjee appointed Governor of Punjab; Hemananda Biswal sworn in as Orissa Chief Minister (7); Dr. Rubia Sayeed, daughter of Union Home Minister kidnapped by Kashmiri militants, demanding release of 5 terrorists (8); New Chief Minister for Madhya Pradesh: Shyama Charan Shukla (9); Air Chief Marshal (retd.) Arjan Singh named Delhi Lt. Governor (12); Dr. Rubiya Sayeed released in Srinagar (13); Bombay girl Suzanne Sablok crowned Miss India 1989 (16); All-party meeting on Punjab decides to scrap the 59th Amendment to the Constitution and punish those guilty of violence in 1984 riots (17); Prof. M. G. K. Menon sworn in Minister of State for Science and Technology; Rabi Ray from Orissa elected Speaker of the Lok Sabha; Justice Sabyasachi Mukherjee sworn in as Chief Justice of India (18); Prime Minister V. P. Singh wins vote of confidence in the Lok Sabha (21); India—Pakistan cricket series: Tests drawn (0-0) and Pakistan sweeps one-day internationals (2-0) (22); India debars Bofors from future contracts until they come out clean; The Constitution 62nd Amendment Bill seeking to extend reservation for scheduled castes and scheduled tribes in Lok Sabha and state assemblies for another ten years, approved in Parliament; Cartoonist K. Shankar Pillai dies in New Delhi (26); Prasar Bharati Bill, 1989, to grant autonomy to radio and television, and Lok Pal Bill to set up the institution to look into complaints of corruption against Prime Minister and his Council of Ministers, introduced in Lok Sabha (29); East Bengal lifts Durand Cup (30).

CHANGE OF GUARD IN DELHI

1990: Election panel made one-member body again—Election Commissioners S. S. Dhanoa and V. S. Seigell removed; 26-year-old Capt. Nivedita Bhasin becomes the youngest woman pilot in world civil aviation history to command a jet aircraft. (Jan. 2). Mohammed Azharuddin named skipper of Indian Cricket team (5). President returns the Indian Post Office (Amendment) Bills of 1986 to Parliament, at the instance of the Government (7). Pratapsingh Rane sworn in Chief Minister of Goa (9). International Film Festival of India opens at Calcutta; South Zone regains Duleep Trophy (10). Upper age limit for Civil Services Examination raised from 26 to 28 years; Vimal Kumar and Madhumita Bisht retain National badminton titles (12). India and Maldives scrap visas; J&K Governor quits(14). Former Minister R. Balakrishna Pillai disqualified from the membership of Kerala Assembly; India offers use of Insat-1D to Maldives; Sujay Ghorpade and Niyati Roy emerge champions in National table tennis championship (15). All Governors asked to resign; Dr. R. R. Diwakar, Gandhian and former Union Minister, dies (16). Assembly elections in 8 states and Pondicherry set for February 27; Jammu & Kashmir Chief Minister Farooq Abdullah quits, Jagmohan new Governor (18). Governor's rule in J&K; Rajneesh, the modern mystic and controversial cult figure, dies (19). Dr. Raja Ramanna sworn in Minister of State for Defence (20). First Information Report registered in Bofors kickbacks case (22). Harminder Singh Sandhu, General Secretary of the AISSF, shot dead (24).

Governors named for 14 states (Feb. 1). Ashok Shandilya of Railways wins National billiards crown (6). Saroj Mukherjee, Chairman of the ruling Left Front in West Bengal and Secretary of the CPI (M) State Committee, dies (10). Assembly election in Manipur (12). B. V. Srinivasamurthy of Karnataka wins National Snooker Crown (13). Over 90 persons killed in an Airbus crash in Bangalore (14). J & K Assembly dissolved (19). United Legislature Front of Opposition parties secure an absolute majority in Manipur assembly elections (21). 5 member Ministry headed by R. K. Ranbir Singh in Manipur (23). Polls in eight States and Pondicherry (27).

In Assembly elections, Janata Dal secures four-fifth majority in Orissa, Biju Patnaik named new Chief Minister; BJP swept to power in Madhya Pradesh and Himachal Pradesh, shares power with Janata Dal in Gujarat and Rajasthan (Mar. 1). DMK Front to form government in Pondicherry and Congress (I) in Maharashtra (2). Janata Dal-BJP coalition government in Gujarat, Chimanbhai Patel—Chief Minister; Sharad Pawar to head government in Maharashtra; Bhairon Singh Shekhewat, national vice-president of BJP to head the BJP-Janata Dal coalition government in Rajasthan (3). Sunderlan Patwa (BJP) and D. Ramachandran (DMK) named Chief Minister of M.P. and Pondicherry respectively; V. P. Singh resigns as party president, but asked to continue; Shanta Kumar, BJP leader, to be sworn in as Chief Minister of H.P.; Congress (I) gains absolute majority in Arunachal Pradesh, Gegong Apang—Chief Minister (4). Government announces an interim relief of Rs. 360 crore to 5 lakh victims of the 1984 Bhopal gas tragedy (5). India wins Indira Gandhi Gold Cup hockey tournament (6). Lalu Prasad Yadav to form Janata Dal Ministry in Bihar; Former Punjab Chief Minister Darbora Singh dies (9). George Fernandes, Union Railway Minister, placed in charge of J&K affairs (12). Deputy Prime Minister Devi Lal withdraws his resignation, submitted two days earlier (18). Union Finance Minister Madhu Dandavate submits Rs. 7,206 crore deficit budget with a mixed bag of new levies and concessions (19). Last of IPKF leaves Sri Lanka (24). Lakshadweep Council elections (25). In Meghalaya, Sangma Ministry quits, B. B. Lyngdon is new Chief Minister; Goan Chief Minister Pratap Singh Rane resigns; Maniben Patel, daughter of Sardar Vallabhai Patel, dies (26). A ten-member Progressive Democratic Front Ministry headed by Churchill Alemao sworn in Goa (27). Bengal wins Renji Trophy (28). Noted Malayalam film actor, Adoor Bhasi dies (29). Constitution (64th) Amendment Bill to extend President's rule in Punjab, collapses in Lok Sabha, it was earlier passed in Rajya Sabha (30). 'Bharat Ratna' posthumously awarded to Dr. B. R. Ambedkar (31).

Lata Mangeshkar wins 1989 Dada Saheb Phalke award; Hindi film "Bagh Bahadur", adjudged best feature film of 1989 (April 4). Lok Sabha passes Punjab Bill; Indian Mrs. Sheela Flather becomes the first Asian to be nominated to the House of Lords (5). B. T. Ranadive, veteran Marxist leader and founder President of WTU, passes away (6). General Manager of HMT watch factory in Srinagar, H. L. Khera, who was kidnapped by Kashmiri subversives—found murdered (10). L. P. Poarbosa sworn in as Chief Minister of Goa; Veena Vidwan S. Balachander dies (14). Wills XI cricket team wins Wills Trophy (15). 18 more Ministers added to the National Front Ministry — 13 Ministers of State and 5 Deputy Ministers (21). The first indigenously-built missile boat, "Vibhuti", launched (26).

Supreme Court directs Central Government to set up a Tribunal to resolve Cauvery water dispute between Tamil Nadu and Karnataka (May 4). Government disallows Shilanyas at Ayodhya; Government of India bans strikes in any service in any oil field or refinery under the Essential Services Maintenance Act (7). A 255 km p h cyclone lashes Andhra Pradesh coast causing heavy losses to life and property. Mr. Paul Mantosh and Mr. Joss Fernandes take oath as nominated Anglo-Indian members in Lok Sabha (8). S. R. Bommai unanimously elected President of Janata Dal (19). Prime Minister V. P. Singh clears the Rs. 13,000 crore Sardar Sarovar (Narmada) Project (21). Banarasi Das Gupta elected Chief Minister of Haryana following Om Prakash Chautala's resignation (23). Rajya Sabha unanimously decides to reprimand Congress (I) M.P. K. K. Tewary if he was found to have issued a statement bringing the office of the Chairman into indignity. Surjit Singh Barnala sworn in as Governor of Punjab (24). Jammu and Kashmir Governor Jag Mohan resigns. Mr. Girish Chandra Saxena appointed new Governor (25). Former Chief Minister Om Prakash Chautala wins Mehem bye-election (27).

Union Government set up a tribunal to settle the long drawn dispute of sharing Cauvery water between Tamil Nadu & Karnataka (June 2). Government of India decides to extend validity of passports to 10 years (6). Nepal Prime Minister Krishna Prasad Bhattarai and Indian Prime Minister V. P. Singh at a meeting in New Delhi decide to restore ties between the countries to normal (8). CPI(M) accuses Communist Party of Soviet Union of departing from the basic ideology of Marxism-Leninism in the name of correcting past distortions. INSAT 1D launched from the Kennedy Space Centre in Florida (12). Mr. Veerendra Verma sworn in as the new Governor of Punjab and Administrator of Chandigarh (14). Punjab Government returns to SGPC gold and other valuables seized from Golden Temple during the 1984 Blue Star operation (15). Bombay gets 42 cm rainfall, the century's highest. The previous high of 41 cm was recorded on June 18, 1986; Government of India announces higher procurement/minimum support prices for all major kharif crops (16). National Development Council approves approach paper to the Eighth Plan. Thirteen Sri Lankan Tamils, including EPRLF Secretary General Padmanabha shot dead in Madras reportedly by LTTE men (19). Government announces measures to curb use of petroleum products. Petrol bunks to work only from 6.00 a.m. to 7.00 p.m. Sundays to be closed (21). Defence Scientists successfully test fire country's first third generation anti-tank missile "NAG". President Mr. R. Venkataraman issues notification formally constituting an Inter-State Council (24).

Mr. Chandrasekhar, Janata Dal leader, expresses disagreement with new industrial policy. General Sunith Francies Rodrigues takes over as Chief of the Army Staff (July 1). Jammu & Kashmir

Governor G. C. Saxena promulgates J&K Disturbed Areas Act, 1990, declaring several districts as disturbed area. Support price for rabi wheat for 1990-91 raised to Rs. 215 a quintal from Rs. 200 (5). Ms. Maneka Gandhi, Minister of State for Environment says India should sign Montreal protocol to protect the ozone layer (9). Maharashtra Government decides to notify Bombay metropolis and Thane as disturbed areas (11). Three Union Ministers—Mr. Arun Nehru, Mr. Arif Mohammed Khan, and Mr. Satpal Singh submit resignation in protest against O. P. Chautala's taking over as Chief Minister of Haryana (13). Prime Minister V. P. Singh offers to step down following political crisis on account of O. P. Chautala assuming Chief Ministership in Haryana (14). Haryana Chief Minister O. P. Chautala resigns following directive from Janata Dal (16). Following the end of six months Governor's rule, President's rule imposed in Jammu & Kashmir (18).

Planning Commission decides to make changes in the Gadgil formula for central assistance to States in consultation with states (19). Government of India notifies restrictions on liberal import policy announced earlier. The restrictions will cut the import bill by about Rs. 1000 crore. Tamil Nadu Bandh organised by Tamil Nadu Government to protest against the killing of Tamils in Sri Lanka passes off peacefully. Chief Justice of India, Mr. Justice Sabyasachi Mukherjee advises Supreme Court Justice V. Ramaswamy to go on leave till investigation in regard to audit report on his spending of money while he was Chief Justice of Punjab and Haryana High Court, is over (20).

Dy. Prime Minister Devi Lal dropped from Union Cabinet following wild charges he made against colleagues in an interview with the *Illustrated Weekly* (Aug. 1). National Front M.Ps affirm faith in V. P. Singh leadership (2). Union Government accepts Mandal Commission recommendations and decides to reserve 27 per cent jobs for Backward classes. Union Cabinet clears approval for setting up Indian Broadcasting (Programme) service (7). Violent protests rock Bihar against Mandal Commission Report implementation (8). India successfully test fires advanced medium range surface to air "Akash" missile. Government of India declares Prophet Mohammed's birthday a national holiday (15). Government moves in the Lok Sabha Prasar Bharati Bill (21). Government of India announces formation of National Security Council, headed by the Prime Minister (25). The Cabinet Committee on political affairs decides to put a proposal before Parliament providing five to ten per cent of Central Government jobs reserved for economically weaker sections (27). Parliament unanimously passes Prasar Bharati Bill (30).

Congress (I) opposes the Prasar Bharati Bill in the Rajya Sabha saying the party wants the bill to be sent to a select committee. An all party meeting refuses to endorse the decision to implement Mandal Commission Report according to which 27% jobs are reserved for backward communities (Sept 4). Rajya Sabha approves Prasar Bharati Bill, rejecting by voice vote three motions moved by the Congress(I) to refer the Bill to a joint select committee (5). Mother Teresa re-elected head of the Missionaries of Charity (8). India seeks United Nations permission to take food and medicines to Indians stranded in Kuwait (10). Konkan Railway project formally launched with the opening of a project office in Ratnagiri in Maharashtra State (12). United Nations Sanctions Committee clear India's proposal to send food and medicine to stranded Indians in Kuwait (14). Air India establishes a world record by evacuating more than 50,000 persons in 5 weeks from Kuwait/Iraq (16). Planning Commission announces 8th Five Year Plan proposals with a total outlay of Rs. 610,000 crore. Delhi University student Rajeev Goswami attempts to self immolate in protest against implementation of Mandal Commission Report (19). Supreme Court refuses to stay implementation of Mandal Commission Report (21). BJP decides not to attend National Integration Council's meeting in protest against the manner in which the deliberations of the Council's sub-committee on National Harmony were publicised so as to misrepresent the BJP stand on the Ayodhya issue (22). World Bank clears Rs. 1,200 crore aid for Sarovar Dam rejecting objections raised by environmental groups (23). Supreme Court Chief Justice Sabyasachi Mukharji, 63, dies of a heart attack in London. Former Chief Minister of West Bengal, P. C. Sen, 94, dies in Calcutta. One of the students, S. S. Chauhan, who suffered severe burns while trying to immolate himself in protest against implementation of Mandal Commission Report, dies. L. K. Advani, BJP President starts his Somnath Temple—Ayodhya rathyathra (25). Central Government adopt a three pronged strategy to create an additional 30 lakh jobs outside the Government sector over the next five years (29). Former Dy P.M. Devilal submits letter of resignation from Parliament (30).

Supreme Court stays implementation of Mandal Commission recommendations. Mr. Justice Ranganath Mishra appointed Chief Justice of Supreme Court. Constitution 75th amendment bill to extend President's rule in Punjab for another six months fails through the first stage in Lok Sabha for want of a simple majority (Oct. 1). Parliament passes the constitution 76th Amendment Bill to extend President's rule in Punjab for another six months from November 10, 1990 (5). Justice Ranganath Mishra sworn in as Chief Justice of Supreme Court (6). Congress President Rajiv Gandhi announces in Bangalore that Karnataka Chief Minister Veerendra Patil is stepping down owing to ill health. However, Veerendra Patil refuses to abide by the decision and announces he will stay on (7). Veteran freedom fighter and Congress leader Kamalapati Tripathi

(86), dies in Varanasi (8). Following political uncertainties in the wake of Veerendra Patil's decision to stay on in defiance of Congress Party's decision, President's rule is imposed in Karnataka (10). 42nd National Development Council meeting begins in New Delhi (11). Government of India announces a 15% cut in oil consumption, exempting LPG and kerosene (12). Government announces a temporary surcharge of 25% on petroleum products. LPG is exempted (14). Dr. Nelson Mandela, the South African black nationalist leader arrives in India for a five day visit (15). Dr. Nelson Mandela, conferred with 'Bharat Ratna', the highest civilian honour (16). S. Bangarappa sworn in as Chief Minister of Karnataka, following revocation of President's rule (17). Government of India under an ordinance acquires the land at Ayodhya which is under dispute and the adjoining land. The Government also put forward a three point formula, (i. To acquire the land, ii. Barring disputed land other land may be given for construction of temple. iii. The dispute under consideration of Lucknow Bench of Allahabad High Court may be referred to Supreme Court) to end Ramjanma Bhumi—Babri Masjid dispute (19). Andhra Pradesh Government announces a five-day week for all offices and educational institutions from Nov. 1, 1990 (20). Doordarshan starts afternoon news bulletins at 2 p.m. (Hindi) and 3 p.m. (English) of 7.5 minutes duration on week days and 5 minutes on Sundays (21). Following the arrest of BJP President L. K. Advani who was leading a ratha yathra to Ayodhya, at Samasthipur in Bihar, BJP withdraws support to National Front Government. The Ordinance issued taking over the land in Ayodhya is withdrawn (23). BJP sponsored Bharat Bandh in protest against L. K. Advani's arrest evokes mixed response (24). Janata Dal and BJP withdraw support to Rajasthan and Gujarat Ministries respectively as an aftermath of the parting of ways by the two parties at the centre. Janata Dal ministers in Rajasthan and BJP ministers in Gujarat resign (25). V. Shantaram (90), veteran film maker dies in Bombay (28). Vishwa Hindu Parishat and BJP claim that Karseva was performed at Ram Janma Bhumi/Babari Masjid at Ayodhya, while Government sources refute the claim. Several people died and many injured as security forces open fire at the crowd marching towards Ram Janma Bhumi/Babari Masjid to perform karseva (30).

In Gujarat, Janata Dal Government headed by Chimanbhai Patel defeats no-confidence motion with Congress(I) support (Nov. 1). Many die in firing in Ayodhya as Karsevaks storm the Ram Janma Bhumi/Babri Masjid structure. Curfew in many areas in north and west India to prevent communal violence. Several people die in violence (2). Janata Dal splits—the breakaway group claims support of 58 MPs and elect Mr. Chandrasekhar as leader (5). National Front Government headed by V. P. Singh loses confidence motion in the Lok Sabha (151-356) V. P. Singh tenders resignation (7). Congress(I) extends support to Chandrasekhar to form Government, even as BJP and left parties decline the request of President R. Venkataraman to form Government. Rajasthan BJP Chief Minister Bhairon Singh Shekhwat wins confidence motion with the help of Janata Dal rebels (116-80) (8). Janata Dal expels Gujarat C.M. Chimanbhai Patel and UP C.M. Mulayam Singh Yadav from Legislative wings and primary membership of the party (9). S. Chandrasekhar sworn in as Prime Minister, and Devilal as Dy. P.M. (10). Uttar Pradesh Government raises the reservation for backward classes in direct recruitment to State Services from 15 to 27 per cent (12). Chandrasekhar Government wins confidence motion—280 for 214 against and 11 abstained (17 members were absent). Allahabad High Court stays UP Government's decision to increase reservation quota for backward classes (16). in U.P. Mulayam Singh Yadav (Janata Dal (S) ministry wins a confidence motion (224-146) with the help of Congress(I). Union Government asks Supreme Court to repeal the 470 million Bhopal Gas settlement order (20). Prime Minister Chandrasekhar expands his council of ministers (21). Bihar Chief Minister Lalu Prasad Yadav wins confidence motion (202-108) (22). The tenth Indian Scientific Expedition team of 100 members led by Dr. A. K. Hanjura to Antartica sets off from Mormugao Harbour. Seventy five members will return after a few months, while 25 will remain there till March 1992 (27). President's rule imposed in Assam. Assembly kept in suspended animation. United Liberation Front of Assam and National Socialist Council of Nagaland banned. Union Cabinet approve re-induction of Airbus A-320 in the domestic sector. These aircraft had been kept idle following crash of one of them in Bangalore in February 1990 (28). Admiral Laxmi Narayan Ramdas takes over as Chief of Naval Staff (30).

Mrs. Vijaya Laxmi Pandit (90), sister of Jawharlal Nehru and veteran freedom fighter, passes away at Dehra Dun. She was the first Indian woman to become a minister (in UP, 1937-39), first woman Ambassador (UK), first woman to lead a delegation to UN, the first woman to become UN President. Vishwa Hindu Parishad leaders and Babri Masjid Action Committee leaders meet in New Delhi to find a solution to the Ram Janma Bhumi/Babri Masjid problem (Dec. 1). Maharashtra Gomantak Party formally withdraws support to Goa ministry headed by Dr. Luis Proto Barbosa (4.). With the induction of 60 ministers, the Bihar Cabinet becomes the largest ever cabinet in the country so far, with a total of 71 ministers (5). Vishwa Hindu Parishad–sponsored Karseva in Ayodhya passes off peacefully (6). Goa Chief Minister Dr. L. P. Barbosa resigns following withdrawal of support by M.G.P. The communal disturbances in Hyderabad claim more than 100 lives, as violence spreads to Aligarh and Kanpur (10). Mr. T. N. Seshan appointed Chief Election

Commissioner, and Mr. Mohan Dharia Deputy Chairman of the Planning Commission (11). India decides to rush food, medicines and other essential commodities to Soviet Union (13). President's Rule imposed on Goa. Caretaker Chief Minister Dr. L. P. Barbosa disqualified from the membership of Assembly for defection from Congress (I) nine months ago (14). Andhra Pradesh Chief Minister Dr. M. Channa Reddy resigns (16). N. Janardhan Reddy sworn in as Chief Minister of Andhra Pradesh (17). Mr. Justice M. K. Chawla of the Delhi High Court directs the CBI and Union of India to show cause why proceedings in Bofors case be not quashed. Following a three-judge committee coming to the conclusion that the allegations against him do not relate to any lapses in his judicial conduct, Mr. Justice Rama Swami of the Supreme Court is asked to return to work (19). India and Pakistan agree not to attack each other's nuclear installations. Supreme Court stays Delhi High Court judge Mr. Justice Chawla's orders on the Bofors issue (20). Former Union Finance Secretary S. Venkatramanan appointed Governor of Reserve Bank. B. Rachaiah and Dr. Sarup Singh sworn in as Governor of Kerala and Gujarat respectively (21). All India Babri Masjid Action Committee and Vishwa Hindu Parishad hand over historical and archaeological documents to support their claim to Home Ministry officials (23). DMK led Pondicherry Ministry headed by D. Ramachandran resigns following loss of majority. Central Govt. introduces fresh direct tax proposals to raise additional Rs. 810 crore by raising income tax and fixing limits for deduction of depreciation (27). Prime Minister Chandra Sekher and Akali leader Simranijit Singh Mann hold talks in New Delhi to find a solution to Punjab problem. Following war threat as the January 15 deadline set by UN for Iraq to withdraw from Kuwait approaches Government of India advise Indians in Gulf to send back their families to India (28).

THE CONSTITUTION

The Constitution of India came into effect on 26th January 1950. It was drawn up by a Constitutent Assembly initially summoned on Dec. 9, 1946. The constitution was adopted on November 26, 1949.

The Constitutent Assembly was initially summoned for undivided India. With the partition of India in June 1947, the delegates of the Pakistan areas ceased to be members of the Assembly. On August 14, 1947, the Constitutent Assembly met again as the Sovereign Constituent Assembly for the Dominion of India under the presidentship of Sachidananda Sinha. On the demise of Sinha, Dr. Rajendra Prasad became the President of the Assembly. A draft Constitution was published in February 1948. The Constitution was finally adopted on 16th Nov. 1949. It came into effect on 26th Jan. 1950.

The Indian Constitution closely follows the British Parliamentary model but differs from it in one important respect. In Britain, the Parliament is supreme. No court can question the validity of any law passed by the British Parliament. In India the Constitution is supreme, not the Parliament. So the Indian courts are vested with the authority to adjudicate on the constitutionality of any law passed by the Parliament.

This position, otherwise clear, was complicated by the action of the Constitutent Assembly itself. Having promulgated the Constitution, the Constituent Assembly converted itself into the first Indian Parliament. Thus the creator of the constitution, the Constituent Assembly, became the creature of the constitution, the Parliament. In the very second year of promulgating the constitution, the first Parliament set out amending it. This was the *First (Constitution) Amendment Act, 1951*. This amendment planted the seeds of future troubles between the Parliament and the Judiciary. It clearly showed that the Parliament possessed both constitutent and legislative powers. Subsequent Parliaments naturally claimed plenary powers to amend the constitution, in any manner they thought fit.

The powers claimed by Parliament, on the one hand, and the rights vested in the judiciary, on the other, were bound to clash in the long run. The conflict at first centred round specific provisions of law passed by Parliament. When any such provision was declared unconstitutional, the laws were either amended to suit the constitution or the constitution was amended to suit the laws. Such a course naturally precipitated the question whether Parliament possessed unlimited powers to amend the constitution.

The question came up in the Keshavananda Bharati case (1973) where the Supreme Court ruled that the power of amendment vested in the Parliament under Art. 368 (relating to amendment of the constitution) cannot be so exercised as to alter or destroy the basic structure of the constitution. If Parliament had the power to destroy the basic structure of the constitution, it would cease to be a creature of the constitution and become its master.

The question came up again in the Minerva Mills case, after the 42nd amendment was passed. The 42nd amendment effected a constitutional revolution, wherebty Parliament overthrew the supremacy of the constitution and made itself supreme in its stead. The first question before the court was whether the Parliament had unbounded powers to amend the constitution.

The Supreme Court delivered its judgement in the Minerva Mills case on May 9, 1980. The court held that the Parliament cannot expand its amending power under Art. 368, so as to abrogate the constitution or to destroy its essential feature. Their Lordships observed, "The donee of a limited power cannot by exercise of that power convert the limited power into an unlimited power". The avowed purpose of the 42nd amendment was to remove doubts.

"But, said the Court, "after the decision of this court in Keshavananda Bharati case, there could be no doubt as regards the limitations of Parliament's power to amend the constitution. The new clause (5) of Art. 368 confers on the Parliament an undefined power to amend the constitution, even so as to distort it out of recognition.... No constiutent power can conceivably go higher than the skyhigh power conferred by clause (5), for, it even empowers the Parliament to repeal provisions of the constitution, that is to say, destroy democracy and substitute for it a totally antithetic form of government."

Another question before the Court was whether the Parliament had the power to bar the jurisdiction of the court to enquire into the constitutional validity of laws. On this question the court ruled that "Our constitution is founded on a nice balance of power among the three wings of the State, namely the Executive, the Legislature and the Judiciary. It is the function of Judges, nay their duty, to pronounce upon the validity of laws."

"Human dignity" (sic), the court observed, "has not yet devised a system by which the liberty of the people can be protected except through the intervention of courts of law". Again. "The conferment of the right to destroy the identity of the constitution, coupled with the provision that no court of law shall pronounce upon the validity of such destruction, seems to us a transparent case of transgression of the limitations on the amending power."

A third question which the court had to consider was the precedence of Directive Principles over Fundamental Rights. This question was first projected by the 25th amendment. This amendment gave precedence to two clauses of Directive Principles as against Fundamental Rights. They are Art. 39(b) which related to the ownership and control of the material resources of the community and Art. 39(c) which concerned the question of concentration of wealth in a few hands to the detriment of the community.

The court conceded the application of the principle of the two clauses in question. In the 42nd amendment, this precedence was extended to all the Directive Principles. The court objected to this extension and ruled that "to destroy the guarantees given by Part III (Fundamental Rights) in order purportedly to achieve the goals of Part IV (Directive Principles) is plainly to subvert the constitution by destroying its basic structure".

So far only the three points mentioned above have been identified as Basic Features of the constitution. What the other basic features (if any) are, remains to be elucidated.

The Constitution consists of the following: 1. The Preamble. 2. Parts I to XXII covering Articles 1 to 395. 3. Schedules 1 to 10 and 4. An Appendix.

The Preamble declares India a sovereign *Socialist Secular* Democratic Republic and lays down the primary objects of the constitution, namely, to secure to all citizens justice, social, economic and political, liberty of thought, expression, belief, faith and worship, equality of status and opportunity and fraternity assuring the dignity of the individual and the unity and the integrity of the nation.

The words *'socialist, secular'* and *the unity* and *the integrity of the nation'*, were added by the 42nd Amendment.

Structure. India, that is Bharat, shall be a Union of States (Art. 1). The States and Territories thereof shall be as specified in the first Schedule (Art. 2).

Distribution of Powers. The Union has exclusive power to make laws on all matters in List I of the Seventh Schedule (Union List). The States have exclusive power to make laws on all matters in List II (State List). The Union and States have concurrent powers to legislate on any matter enumerated in List III (Concurrent List) (Art. 246).

Residuary Powers. The Union has exclusive power to make laws on any matter not enumerted in the Concurrent List or State List (Art . 248).

Over-riding Powers. In case of any conflict between Union laws and State laws, the Union laws shall prevail (Art. 254).

Citizenship. Citizenship rights are given to every person who is born in India or either of whose parents was born in India or who has been a resident of India for 5 years, immediately preceding the commencement of the Constitution.

The Constitution of India commenced on the 26th January 1950.

Six Fundamental Rights are granted to citizens under Arts. 12 to 35 of the Constitution (Part III). They are: 1. Right to Equality, 2. Right to Freedom, 3. Right Against Exploitation. 4. Right to Freedom of Religion, 5. Cultural and Educational Rights, 6. Right to Constitutional Remedies, that is to say, all citizens are guaranteed the right to move the Supreme Court or the High Courts by appropriate proceedings for the enforcement of Fundamental Rights.

The 16th and 24th Amendments have considerably limited the exercise of Fundamental Rights.

The Directive principles of state policy are contained in Arts. 36 to 51 of the Constitution (Part IV). These lay down 19 objectives covering a wide range of subjects, which the State shall endeavour to achieve. These are not enforceable at law like Fundamental Rights. Nevertheless, they are declared fundamental to the governance of the country.

Subsequent amendments starting with the 25th have attempted to give precedence to Directive Principles over Fundamental Rights. The 25th amendment restricted such precedence to two objectives, contained in cl. (b) and (c) of Art. 39. They relate to the equitable distribution of material resources and the concentration of wealth in the hands of a few to the detriment of many. These, it may be noticed, were already secured by the amendments to Fundamental Rights which empowered the State to impose reasonable restrictions to the right to property. The 42nd amendment sought to extend this precedence to all objectives specified in Directive Principles. This provision was struck down by the Supreme Court (see supra.)

There shall be a *President of India* (Art. 52) who is the Executive Head of State – [Art. 53–(1)–and the Supreme Commander of the Armed forces (Art. 53(2). The President shall be elected from an electoral college consisting of (a) the elected members of both Houses of Parliament and (b) the elected members of the Legislative Assemblies of the States (Art. 54). The President shall hold office for five years Art. 56(1) and is eligible for reelection (Art. 57).

The Vice-President shall be elected by the members of an electoral college consisting of the members of both houses of Parliament (Art. 66(1). The Vice-President may hold office for five years (Art. 67), and shall be the ex-officio Chairman of the Council of States (Art. 64).

There shall be a *Council of Ministers* with the Prime Minister at the head to aid and advise the President in the exercise of his functions–[Art. 74(1)]. The Prime Minister shall be appointed by the President, and the other Ministers shall be appointed by the President, on the advice of the Prime Minister–Art. 75(1). The Ministers shall hold office during the pleasure of the President–Art. 75(2). The Council of Ministers (as at present constituted) consists of the Prime Minister and (1) Ministers who are members of the cabinet, (2) Ministers of State (Union Ministers) who are not members of the cabinet and (3) Deputy Ministers.

A Secretary to Government is the *administrative head* of a ministry and the principal adviser of the minister. When the volume of work in a ministry exceeds the manageable charge of the Secretary, one or more wings may be established under a Joint Secretary. A ministry is divided into divisions, branches and sections functioning under Deputy Secretaries, Under Secretaries and Section Officers respectively.

There shall be a *Parliament* for the Union, which shall consist of the President and two Houses, the Council of States (Rajya Sabha) and the House of the People (Lok Sabha)– Art 79.

The Council of States shall consist of not more than 238 elected representatives of States and Union Territories and 12 members to be nominated by the President (Art. 80). The House of the People shall consist of not more than 500 members chosen by direct election from territorial constituencies in States and not more than 25 members to represent Union Territories (Art. 81).

The Council of States shall not be subject to dissolution but as nearly as possible one-third of its members shall retire, as soon as may be, after the expiry of 2 years. The House of the People shall continue for 5 years (unless sooner dissolved) from the date of its meeting and no longer and the expiry of the said period of five years shall operate as dissolution of the House (Art. 83). This mandatory provision of dissolution may be extended for a year due to emergency.

The following committees are appointed to assist the Parliament in its deliberations: 1. Public Accounts Committee, 2. Estimate Committee, 3. Public Undertakings Committee, 4. Committee on Government Assurances.

In a presidential system of government like that of the USA, the three branches of government–the Legislature, the Executive and the Judiciary–are independent units. But in a Parliamentary system like that of India the Executive is subordinate to the Legislature. The Judiciary alone functions as an independent branch.

Chapter IV Part IV of the Constitution deals with judiciary. There shall be a *Supreme Court of India*, consisting of a Chief Justice of India and other judges: Art. 124(1). The parliament has the power to increase the number of judges.

A judge of the Supreme Court is to be appointed by the President after consultation with the Chief Justice of the Supreme Court and shall hold office until the age of sixty-five and can be removed from office by the President, only after an address by each house of Parliament supported by more than two-thirds majority of members present and voting.

The Supreme Court has both original and appellate jurisdiction. The original jurisdiction is limited to questions between the Government of India and the States, or between the States inter se and to such other questions which involve "the existence or the extent of a legal right" (Art. 131). The Appellate Jurisdiction extends over all the High Courts in India (Art. 132).

The Attorney General. The President shall appoint a person who is qualified to be appointed as a judge of the Supreme Court, to advise the Government of India on legal matters (Art. 76). He has the right to speak and take part in the proceedings of either House and to be a member of any Parliamentary Committee but is not entitled to vote (Art. 88).

There shall be a *Comptroller and Auditor General of India* who shall be appointed by the President. He shall only be removed from office in like manner and on the like grounds as a Judge of the Supreme Court (Art. 148)(1). He exercises a general control over the accounts of the Union and State Governments (Art. 149). He is not eligible for further office either of the Union or State governments, once he has retired [Art. 148(4)].

Election Commission is to supervise and control all matters relating to elections to the Parliament and State Assemblies and to the office of the President and Vice-President (Art. 324). The Election Commission may consist of the Chief Election Commissioner and such other Election Commissioners as the President may appoint from time to time. When any other Election Commissioner is appointed, the Chief Election Commissioner shall function as the Chairman of the Election Commission. The Chief Election Commissioner cannot be removed from office except in the same manner and on the same grounds as a judge of the Supreme Court (Art. 324).

The system of *Government in States* closely follows the pattern of the Union Government. The expression 'State' does not include the State of Jammu and Kashmir, unless otherwise indicated (Art. 152).

The Governor of a State is the Executive head of the State government (Arts. 155 and 156). He is assisted by a Council of Ministers, with the Chief Minister at the head (Art. 163). The Chief Minister is to be appointed by the Governor and other Ministers are to be appointed on the advice of the Chief Minister.

The Legislature of a State shall consist of the Governor and one or two houses of legislature, as the case may be (Art. 168).

The Legislative Assembly of a State may consist of not more than 500 and not less than 60 members (Art. 170). The total number of members in the Legislative Council, if any, shall not exceed one-third of the total number of members in the Assembly (Art. 171).

There shall be a High Court for each State, consisting of a Chief Justice and such other judges as the President may appoint (Arts. 214 and 216). A judge of the High Court can be removed from office by the President, in the same manner as he may remove a judge of the Supreme Court (Art. 217). The High Courts have original jurisdiction in such matters as writs and appellate jurisdiction over all subordinate courts in their jurisdiction.

Every state shall have *an Advocate General to* advise the Government on *legal matters (Art. 165).*

The *Union Territories* ordinarily have no Council of Ministers or legislatures of their own. But the Parliament may *by law* create for any of the Union Territories a body, whether elected or partly elected and partly nominated to function as a legislature for the Union Territory or a Council of Ministers or both (Art. 239A).

Article 343 of the Constitution provides that the official language of the Union shall be Hindi in the Devanagari script and the form of numerals for official purposes, shall be the international form of Indian numerals; in other words, the Arabic numerals. English, which was originally to continue as the official language only upto Jan. 26, 1965, will under the Official Languages Act, 1963 continue to be used even after that date in addition to Hindi.

Art. 368 deals with *amendment* of the *Constitution.* A Bill for Amendment must be passed in each House by a majority of the total membership of that House and by a majority of not less than two-thirds of the members present and voting.

Amendments to certain parts of the Constitution, however, require ratification of the Legislatures of not less than one-half of the States by resolutions to that effect.

There are *Ten Schedules* to the constitution, the ninth being added by the First Amendment to the constitution in 1951 and the 10th by the 52nd Amendment in 1985.

First Schedule (under Articles 1 and 4) gives a list of the States and Territories comprising the Union.

States: 1. Andhra Pradesh, 2. Assam, 3. Bihar, 4. Gujarat, 5. Kerala, 6. Madhya Pradesh, 7. Tamil Nadu, 8. Maharashtra, 9. Karnataka, 10. Orissa, 11. Punjab, 12. Rajasthan, 13. Uttar Pradesh, 14. West Bengal, 15. Jammu and Kashmir, 16. Nagaland, 17. Haryana, 18. Himachal Pradesh, 19. Manipur, 20. Tripura, 21. Meghalaya, 22. Sikkim, 23. Arunachal Pradesh, 24. Mizoram, 25. Goa.

Uniion Territories: 1. Delhi, 2. Andaman and Nicobar Islands, 3. Laccadive, Minicoy and Amindivi Islands, 4. Dadra and Nagar Haveli, 5. Daman and Diu, 6. Pondicherry, 7. Chandigarh.

Second Schedule under Arts. 59(3), 65(3), 75(6), 97, 125, 148(3), 158(3)] consists of 5 Parts, A to E.

Part A fixes the remuneration and emoluments payable to the President and Governors. The following emoluments per mensem shall be paid to the President: Rs.10,000. Governor of State: Rs.5,500. The President and the Governors of the States shall also be paid such allowances as were payable respectively to the Governor General of India and the Governors of the corresponding provinces immediately before the commencement of this Constitution. *Part B* has been deleted by the Constitution (Seventh Amendment) Act of 1956. *Part C* contains provisions as to the Speaker and the Deputy Speaker of the House of the People and the Chairman and the Deputy Chairman of the Council of States and the Speaker of the Legislative Assembly and the Chairman and the Deputy Chairman of the Legislative Council. *Part D* contains provisions as to emoluments of the judges of the Supreme Court and of the High Courts. Chief Justice of the Suprme Court Rs.5,000 per month. Any other judge of the Supreme Court Rs.4,000 per month. Chief Justice of High Courts Rs.4,000 per month. Any other judge of High Courts Rs.3,500 per month. *Part E* contains provisions as to the Comptroller and Auditor General of India. Pay Rs.4,000 per month. (The salaries have been revised since by Amendments to the Constitution).

Third Schedule (under Arts. 75(4), 99, 124(6), 148(2), 164(3), 188 and 219) contains forms of *Oaths and Affirmations.*

Fourth Schedule [under Arts. 4(1) and (20)] allocates seats for each State and Union Territory, in the Council of States.

Fifth Schedule [under Art. 244(1) provides for the administration and control of Scheduled Areas. This schedule provides for amendment by a simple majority of Parliament and takes it out of the ambit of Art. 368 (Amendment of the Constitution).

Sixth Schedule [under Arts. 214(2) and 275(1)] provides for the administration of Tribal Areas in Assam, Meghalaya and Mizoram. This is a lengthy schedule which goes into the details of the administration in the Tribal Areas concerned. This schedule can also be amended by a simple majority of the Parliament.

Seventh Schedule (under Art. 246) gives three Lists: *1. Union List* contains 97 subjects in which the Union government has exclusive authority. *2. State List* contains 66 subjects which are under the exclusive authority of State governments. *3. Concurrent List* contains 47 subjects, where the Union and States have concurrent powers.

Eighth Schedule [under Arts. 344(1) and 351(1)] gives a list of 15 languages recognized by the Constitution: 1. Assamese, 2. Bengali, 3. Gujarati, 4. Hindi, 5. Kannada, 6. Kashmiri. 7. Malayalam, 8. Marathi, 9. Oriya, 10. Punjabi, 11. Sanskrit, 12. Sindhi, 13. Tamil, 14. Telugu, 15. Urdu.

Ninth Schedule [under Art. 31(B)] was added by the Constitution (First Amendment) Act 1951. It contains Acts and orders relating to land tenures, land tax, railways, industries, etc, passed by the State governments, and the Union government which are beyond the jurisdiction of civil courts.

The relevant Art. 31(B) reads as follows: "None of the Acts and Regulations specified in the Ninth Schedule, nor any of provisions thereof shall be deemed to be void or ever to have become void on the ground that such Act, Regulation or Provision is inconsistent with or takes away or abridges any of the rights conferred by any provisions of this part and notwithstanding any judgement, decree or order of any court or tribunal to the contrary, each of the said Acts and/or Regulations shall, subject to the power of any competent Legislature to repeal or amend it, continue in force."

Tenth Schedule [under Articles 101, 102, 191 and 192) was added by the Constitution (52nd Amendment) Act 1985. It contains the Anti-defection Act.

THE AMENDMENTS

With thirteen amendments to the constitution in 1990, the number of amendments uptill now stood at 76. Some of these are still in the process of adoption. As in the case of the American Constitution, some of the amendments have become better known than the constitutional provisos themselves. One of the peculiar features of the Indian Constitution is that various parts of it call for various processes of amendments.

The methods of amendment are three, according to the subject matter of the Article concerned. 1) Articles that may be amended by a simple majority of Parliament. These are mainly matters of detail like those provided in the Schedules. 2) Articles that may be amended by a two-thirds majority of both houses of Parliament. These are comparatively important matters. 3) Articles that require not only a two-thirds majority of Parliament but also ratification by at least one-half of the State Legislatures.

These are specifically mentioned. They are the following: Articles concerning the election of the President (Arts. 54 & 55), the powers of the Union Cabinet (Art. 73), the powers of State Cabinets (Art. 162), the High Courts in Union Territories (Art. 241), the establishment of the Supreme Court (Ch. IV, Part V), Constitution and powers of the High Courts

(Ch. V, Part VI). Relations between the Union & State Legislatures (Ch. 1, Part XI), the Lists—Union List, State List and Concurrent List—in the Seventh Schedule, the representation of States in Parliament and the provisions of Article 368 itself (Part XX).

Article 368 (Part XX) lays down the general procedure for Amendments. But Articles that require only a simple majority in Parliament do not fall in this category. Such Articles are indicated by a special clause attached to each of them which specifically excludes the operation of Art. 368 (see Art. 21, Sixth Schedule). Amendment of all other Articles comes within the scope of Art. 368.

Starting with the First (Constitution) Amendment Act 1951 we have come down to the 58th Amendment in 1987. This works out at an average of 1½ amendments per year.

1. (1950) This amendment has permitted reasonable restrictions to be imposed by law on the exercise of the right of freedom of speech and expression in the interest of friendly relations with foreign States, or public order.

2. (1952) Amended Article 81 with a view to readjusting the scale of representation in the House of the People, necessitated by the completion of the 1951 census.

3. (1954) Substituted entry 33 of the Concurrent List in the 7th Schedule by a new one including foodstuffs, cattle fodder, raw cotton and jute as additional items whose production and supply can be controlled by the Central Govt. if found expedient in the public interest.

4. (1955) The Amendment provides that when the State compulsorily acquires private property for a public purpose, the scale of compensation prescribed by the authorizing legislation could not be called in question in a court.

5. (1955) Empowers the President to fix a time limit for State Legislatures to express their views on proposed central laws affecting the area and boundaries etc. of their respective states.

6. (1956) Added a new entry to the Union List in the Seventh Schedule relating to taxes on the sale and purchase of goods in the course of Inter-State transactions.

7. (1956) It was passed for the reorganization of the States. It involved not only the establishment of new States and alterations in State boundaries but also the abolition of the three categories of the States and the classification of certain areas as Union Territories.

8. (1960) Extended the special provision relating to reservation of seats for the Scheduled Tribes and representation of Anglo-Indians in the House of the People and Legislative Assemblies of States, for a further period of ten years from Jan. 26, 1960.

9. (1960) Amended the first Schedule to the Constitution in order to give effect to the transfer of certain territories to Pakistan in pursuance of the agreements entered into between the Government of India and Pakistan in Sept. 1958.

10. (1961) Incorporated former Portuguese enclaves of Dadra and Nagar Haveli within India and provided for their administration by the President.

11. (1961) Obviated the necessity of a joint meeting of the two Houses of Parliament by forming them into an electoral college for the election of Vice-President. It also amended Art. 71 so as to make it clear that the election of the President or the Vice-President shall not be challenged on the ground of any vacancy, for whatever reason, in the appropriate electoral college.

12. (1962) The twelfth amendment was passed to include the territories of Goa, Daman and Diu as a Union Territory in the First Schedule to the Constitution and to empower the President to make regulations for the peace, progress and good government of these areas.

13. (1962) Created Nagaland as the sixteenth State in the Indian Union.

14. (1962) Conferred necessary legislative powers on Parliament to enact laws for the creation of Legislature and Council of Ministers in Union Territories. Former French establishments of Pondicherry, Karaikal, Mahe and Yanam were specified in the Constitution as the Union Territory of Pondicherry.

15. (1963) Empowers the President of India, in consultation with the Chief Justice of India to make final decisions on the dispute about a High Court Judge's age. It also shortened the procedure for disciplinary action against State employees.

16. (1963) Empowered the State to enact any legislation, imposing reasonable restrictions in the exercise of fundamental rights by citizens, so as to protect the sovereignty and integrity of India.

17. (1964) Provided that if the State acquires land which is under the personal cultivation of the owner and within the ceiling limit, compensation has to be paid at the market value of the property so acquired.

18 (1966) Provided for the linguistic reorganization of the Punjab into a Punjabi-speaking State called Punjab and a Hindi-speaking State called Haryana.

It further provided that the word 'state' in cls. (a) to (e) of Art. 3 includes a Union Territory and clarified that Parliament had the power to form a new State or Union Territory by combining any part of a State or Union Territory with any part of any other State or Territory.

19. (1966) Clarifies the duties of the Election Commission.

20. (1966) Validated the appointment of certain District Judges, irregularly appointed.

21. (1967) Provided for the inclusion of Sindhi language in the Eighth Schedule to the Constitution.

22. (1969) Empowered Parliament to carve a new State (Meghalaya) out of Assam.

23. (1969) Provided for the extension of the reservation of seats for Scheduled Castes and Tribes and the nomination of members of the Anglo-Indian community for another 10 years.

24. (1971) Affirmed the Parliament's power to amend any part of the Constitution, including Fundamental Rights by amending Articles 368 and 13 of the Constitution. This neutralized the decision in Golaknath case.

A peculiar feature of the Amendment was that the President was bound to give his assent to amending Acts, when they were presented to him, thus making Presidential assent an automatic act.

25. (1971) Barred the jurisdiction of courts over acquistion laws in regard to the adequacy of the amount paid in lieu of take-over. The word "compensation" in the case of take-over was deleted and the word "amount" substituted.

26. (1971) This Amendment withdrew the recognition given to former rulers of Princely States and abolished the privy purses granted to them.

27. (1971) Under this Amendment two new Union Territories, Mizoram and Arunachal Pradesh, were set up.

28. (1972) The Amendment deleted Article 314 of the Constitution, which gave protection to the ICS officers' conditions of service and privileges.

29. (1972) This Amendment included the Kerala Land Reforms (Amendment) Act, 1969 and the Kerala Land Reforms (Amendment) Act, 1971, in the Ninth Schedule to the Constitution so as to protect these Acts from judicial review.

30. (1972) This Amendment curtailed the number of appeals to the Supreme Court. Formerly appeals to the Supreme Court were decided on the basis of the valuation of the subject matter. The Amendment made only such cases which involve a substantial question of law, appealable to the Supreme Court.

31. (1973) Increased the upper limit of elective seats in the Lok Sabha from 525 to 545.

32. (1973) Implemented the 6-point programme for Andhra Pradesh.

33. (1974) Invalidated the acceptance of resignations by members of the State Legislatures and Parliament, which were made under duress or coercion, or any other kind of involuntary resignations.

34. (1974) Provided constitutional protection to 20 land reform acts passed by the various States, by including them in the 9th Schedule to the Constitution.

35. (1974) Provided for Associate State status to Sikkim.

36. (1975) Made Sikkim a State of the Indian Union—the 22nd State.

37. (1975) Provided for a Legislative Assembly and a Council of Ministers for the Union Territory of Arunachal Pradesh.

38. (1975) Declaration of Emergency by the President and the promulgation of Ordinances by the President, Governors, and Administrative Heads of Union Territories were made non-justiciable (beyond the purview of the judiciary).

39 (1975) This Amendment placed the election of the President, Vice-President, Prime Minister and the Speaker beyond judicial scrutiny.

40. (1976) Amended Art. 297 and declared that all land, minerals and other things of value underlying the ocean within the territorial waters or the continental shelf or the exclusive economic zone of India shall vest in the Union and shall be held for the purpose of the Union."

41. (1976) raised the retiring age of State Public Service Commission members from 60 to 62. This does not affect the members of the Union Public Service Commission who retire at the age of 65.

42. (1976) The main features of the Amending Act may be summarized as follows:

a) The Preamble has been altered from 'sovereign democratic republic' to 'sovereign socialist, secular, democratic, republic' and 'unity of the nation' into 'unity and integrity of the nation'.

b) The Directive Principles of the Constitution have been given precedence over Fundamental Rights, wherever they came into conflict.

c) Similarly prevention or prohibition of anti-national activities takes precedence over Fundamental Rights.

d) Certain Fundamental Duties are laid down which have to be observed by all citizens. Non-compliance with or refusal to observe the duties shall be punishable by law.. No court shall question the validity of such actions.

e) Number of seats in the Lok Sabha and the State Assemblies which are based on population shall remain frozen as in the 1971 census till 2001 A.D., that is to say, for 2 more Decennial Censuses.

f) The duration of the Lok Sabha and the State Assemblies is increased from 5 to 6 years.

g) The quorum for the Lok Sabha and the State Assemblies prescribed in the Constitution has been removed which means that a quorum is no longer a constitutional necessity.

h) The Parliament may decide what offices are offices of profit under the government or what amounts to corrupt practice in disqualifying an elected member from any house of legislature.

i) Rights and privileges of members and committees of legislatures are to be decided by the concerned houses from time to time.

j) Proclamation of Emergency may be made applicable to any part of the country (instead of the whole country). Similarly emergency can be lifted from any part of the country while it remains in force in other parts.

k) The duration of a Presidential proclamation taking over the government of a State shall be one year instead of six months.

l) The Union has the power to deploy armed forces to any State and to delimit cantonment areas in States. The State cannot exercise any power in the disposition of the armed forces or the administration of cantonment areas.

m) No court can question the competence of the Parliament to amend the constitution in any manner.

n) The Supreme Court alone can adjudicate on the validity of any Central law and the High Courts can adjudicate on the validity of the state laws. If the validity of any State law is dependent on the validity of any Central law or vice versa, then the Supreme Court can adjudicate on them. In any case, any decision on constitutional invalidity has to be made by a two-thirds majority of sitting judges where the number is not less than 5. If the number of judges is less than five the judgement has to be unanimous. It is also provided that the High courts have no power to make an interim order, where it will impede or obstruct any enquiry or action by the Government.

o) The President's liability to act in accordance with the advice of the Council of Ministers has been made practically mandatory.

43 (1977) Which received Presidential assent on April 3, 1978 (i) omits some Articles added by the Forty-second Amendment and (ii) alters other Articles and restores the jurisdiction of Supreme Court and High Courts to review any legislation in States.

44. (1978) makes right to property not a fundamental one, prevents declaration of emergency on account of internal strifes and empowers for declaration of emergency only if there is armed rebellion. It also places restriction on preventive detention.

45. (1980) Extends the safeguards in respect of reservation of seats in Parliament and State Assemblies for Scheduled Castes and Scheduled Tribes as well as for the Anglo-Indians for a period of 10 years.

46. (1982) Tax levied on the consignment of goods in the course of inter-state trade or commerce is assigned to the states.

47. (1984) This amendment is intended to provide for the inclusion of certain land reform Acts in the Ninth Schedule to the Constitution.

48. (1984) This was an amendment to Clause 5(q) article 356 of the Constitution for the continuation of President's rule in Punjab for another year.

49. (1984) The amendment gives constitutional security to the autonomous District Councils functioning in the state of Tripura.

50. (1984) (i) the members of the Forces charged with the protection of property belonging to, or in the charge or possession of the state; or (ii) Persons employed in any bureau or other organization established by the State for purposes of intelligence or counter intelligence; or (iii) Persons employed in, or in connection with, the telecommunication systems set up for the purposes of any Force, bureau or organization were brought within the ambits of Article 33.

51. (1984) Replaces the section dealing with "Scheduled Castes and Scheduled Tribes except in tribal areas of Assam, Nagaland, Meghalaya, Arunachal Pradesh and Mizoram" with "the Scheduled Tribes except the Scheduled Tribes in the autonomous district of Assam"—in articles 330 and 332.

52. (1985) The amendment effected by a Bill popularly called Anti-Defection Bill, was to curb defection by disqualification. The following are the salient features of the Act:-

(1) A Member of Parliament or State Legislature belonging to any political party shall be disqualified for being a member of that House:

(a) If he has voluntarily given up his membership of such political party; or (b) if he votes or abstains from voting in such House contrary to any direction issued by the political party to which he belongs or by any person or authority authorized by it in this behalf without obtaining in either case, the prior permission of such political party, persons or authority, and such voting or abstention has not been condoned by such political party, person or authority within 15 days from the date of such voting or abstention.

(2) An elected member of House who has been elected as such otherwise than as a candidate set up by any political party shall be disqualified for being a member of the House if he joins any political party after such elections.

(3) A nominated member of a House shall be qualified for being a member of the House if he joins any political party after the expiry of six months from the date on which he takes his seat after complying with the requirements of Articles 99 or, as the case may be, Article 188.

53. (1986) inserted a new article (371-G) conferring full statehood on Mizoram.

54. (1986) Amended part D of the 2nd schedule giving effect to the increases of salaries of the Chief Justice and Judges of Supreme Court and High Courts. An enabling provision for changes in the salaries of judges in future by Parliament by law, was made in Article 125 and 221.

55. (1986) conferred full statehood on Arunachal Pradesh.

56. (1987) sought to make a special provision for the setting up of the new state of Goa. Consequently Daman and Diu were separated from the former to form a Union Territory

57. (1987) Amended Article 332 of the constitution providing for special arrangements with regard to reservation for scheduled tribes in the north-eastern states of Arunachal Pradesh, Nagaland, Mizoram and Meghalaya, until readjustment of seats on the basis of the first census after 2000 AD.

58. (1987) authorized the President to publish an authoritative translation of the Constitution.

59 (1988) empowered the Government to impose emergency in Punjab on the grounds that India's integrity was threatened by internal

disturbances.

60 (1988) empowered the State Governments to increase the ceiling on professional tax from Rs. 250 to Rs. 2500 per person per annum.

61. (1989) lowered the voting age from 21 to 18.

62. (1989) provided for the extension by another 10 years of reservation of seats in Parliament and State Assemblies for Scheduled Castes and Tribes and reservation for Anglo Indian community by nomination.

63. (1989) repealed Amendment 59 empowering government to impose emergency in Punjab.

64. (1990) Sought extension of President's rule in Punjab for another six months. This could not be passed for want of quorum.

65 (1990) 64th amendment when again presented for adoption, serial number became 65.

66. (1990) To bring land reforms within the purview of Ninth Schedule of the Constitution.

67. (1990) To set up a National Judicial Commission for making recommendations for the appointment of Supreme Court Judges (excluding Chief Justice of Supreme Court and High Courts), transfer of Judges etc.

68. (1990) To give statutory status to the commission for Scheduled Castes and Tribes.

69. (1990) To make reserved seats for Scheduled Castes and Tribes in Tripura proportionate to population/total number of seats, until readjustment is done after the first census in 2000.

70. (1990) To appoint Chief Election Commissioner and other Election Commissioners in consultation with Chairman of Rajya Sabha, Speaker of Lok Sabha and leader of Opposition in Lok Sabha.

71. (1990) To undertake fresh delimitation of Parliamentary constituencies and State legislature constituencies on the basis of 1981 census.

72. (1990) Seeks grant of Statehood to Delhi as 'Capital State of Delhi.'

73. (1990) For reservation of articles for production in the Handloom Sector.

74. (1990) For constitution of gram sabha, panchayats, and Municipal councils/Corporations and reservation of seats for Scheduled Castes and Tribes in such local bodies.

75. (1990) To extend President's rule in Punjab for another six months.

76. (1990) As no. 75 could not be passed for want of quorum, it was again presented when the Serial No. became No. 76.

Note: Amendments No. 66 to 74 are still under consideration.

EIGHTH FIVE YEAR PLAN

The Eighth Plan (1992-97) will aim at a 5.6 per cent annual growth in the gross domestic product (GDP) involving a total investment of Rs. 792,000 crore, including Rs.342,000 crore in the public sector investment.

This was decided at the first meeting of the reconstituted Planning Commission in New Delhi on September 19, 1991 with Prime Minister P.V. Narasimha Rao in the chair.

The two-year shift of the Five Year Plan by treating the financial years 1990–91 and 1991–92 as annual plan periods was necessitated by the political instability at the Centre. Technically, the Eighth Plan was to begin from April, 1992 but successive government were unable to finalise the Plan document. The Planning Commission constituted by the V.P. Singh Government with Mr. Ramakrishna Hegde as Deputy Chairman was reconstituted by the Chandrasekhar government inducting Mr. Mohan Dharia as the Deputy Chief. Both the Commissions could not make much headway due [illegible]sions [illegible] to the drift in politics.

The achievement of the 5.6 per cent growth rate, the same as registered in the Seventh Plan, would require maintaining domestic savings at the existing average rate of 21.6 per cent, said Mr. Pranab Mukherjee, the new Deputy Chairman of the Commission.

The Commission has also assumed the incremental capital output ratio (ICOR) at 4.1 per cent of GDP and the current account deficit at Rs. 49,000 crore (1.4 per cent of GDP).

The proposed outlay of Rs. 792,000 crore consisted of Rs. 342,000 crore in the public sector, Rs. 148,000 crore in the private sector and Rs. 302,000 crore in the household sector.

The Commission has assumed that exports would grow at the rate of 13.6 per cent per annum during 1992–97.

While domestic savings is assumed at 21.6 per cent, external savings has been put at 1.4 per cent (Rs. 49,000) of the GDP.

Two growth scenarios were considered before approving a 5.6 per cent growth rate. The other scenario projected a six per cent growth rate with an overall investment of Rs. 8,56,000 crore at an assumed rate of domestic savings at 23 per cent, external savings at 1.6 per cent and the ICOR at 4.1.

The second scenario aimed at a public sector investment of Rs. 3,60,000 crore, private sector investment of Rs. 1,82,830 crore and a household sector investment of Rs. 3,13,170 crore.

Both the scenarios envisage a 13.6 per cent annual growth in exports.

The Commission decided against opting for the higher growth rate because it would be difficult to peg it down later if a situation of resources crunch developed in future.

However, the Commission felt that in the present growth scenario there was enough room for "manoeuvrability" to review the growth rate and fix a higher rate if the economy performed well in the years to come, especially with new policy changes.

The emphasis in the new Plan period would be resource mobilisation consistent with non-inflationary deficit financing.

The Commission hoped that the time lag for the new structural adjustments in the economy would be around 18 months and the economy would show reversal of inflationary trends.

On the revised *Gadgil formula* of Central assistance to States, the Prime Minister also announced setting up of a committee with Mr. Mukherjee as chairman and Dr. Manmoham Singh, Finance Minister and Mr. C. Rangarajan, member of the Commission, as members to work out a formula to be presented at the next meeting of the National Development Council (NDC).

The committee would examine the various aspects of the revised Gadgil formula and the consensus formula for the consideration of the NDC.

On transfer of centrally sponsored schemes, the meeting approved the Narasimha Rao committee recommendations for retention of about 125 such schemes by the Centre, 113 to be left to the States and 24 others to be identified as "autonomous".

Approach Paper: The approach paper on the Eighth Plan (1992–97), approved by the Union Cabinet called for a thrust on "services sector" during the next round of liberalisation to achieve higher growth rate in employment.

"Services have to play a major role in generating employment. Expansion of productive services raises the production efficiency of the economy as a whole.

"The thrust of the next round of liberalisation has to be on the services sector. Entry into the services and the "informal" sector has to be made free of innumberable rules, regulations and bureaucratic hurdles.Road transport sector needs to be particularly liberated from such strangleholds. With sustained efforts in a number of directions it should be possible to achieve the projected rate of growth in employment," says the paper.

After the National Development Council (NDC) approval, the Commission will begin work on finalisation of the Plan document which will have to be approved by the NDC again before the next Plan can start from April 1992.

The Paper assumes a domestic savings rate of 21.6 per cent of GDP and a foreign resource inflow of Rs. 49,000 crore (1.4 per cent of GDP). Export growth rate has been estimated at 13.6 per cent per year.The incremental capital output ratio (ICOR) has been assumed at 4:1.

It also lays critical goals for the Eighth Plan giving priority to energy in the infrastructure sector, strengthening of road networks in the physical infrastructure and reduction in time and cost overruns in all major and medium irrigation projects.

In the area of social services, the paper calls for reduction of birth rate, infant mortality, improving nutritional status of pre-school children, universalisation of elementary education and provision of drinking water in all villages.

Transport Sector: On physical infrastructure, the paper said that besides substantially stepping up outlays on roads, the Central Road Fund along with a matching contribution from the Central and State budgets should be treated as a "renovation fund" for the Eighth Plan to renovate the national and State highways and major district roads.

Specific capacity works to ease potential bottlenecks on the trunk routes of the railways should be identified and executed on a priority basis. The existing norms of electrification of railways would need to be suitably modified and a larger share of the Railways plan should be kept apart for electrification.

For augmenting the shipping capacity in the country, privatisation of existing shipyards, streamlining the ship acquisition procedures of the Shipping Corporation of India (if necessary by converting the Government company into a joint stock company and thus freeing it from the Government control) have been recommended.

Strengthening the resource base of the Shipping Credit and Investment Company of India so that it can extend larger financial assistance to private sector for purchase of ships has also been suggested.

Social Services: In the area of social services, the paper said that the past practice of retaining physical targets of crucial social sector goals but reducing financial outlays on the ground of financial stringency needed to be reviewed.

"There has to be determination to implement national commitment to reach specific social goals in a time-bound manner at the end of the Eighth Plan" the paper said.

It also said the size of the financial burden could, however, be reduced by measures for cost recovery, involvement of private sector, catalysation of investment from financial institutions and introduction of the principle of insurance in the provision of services like health.

The paper also said that going by past experience the role of public sector should be selective. There was need for re-examination and reorientation of the role of the Government and for creating an environment which encouraged and built up people's initiatives rather than their dependence on the Government.

It said the State had to play more of a facilitating role and concentrate on building up the basic infrastructure and human resources and protecting the interests of the poor and the underprivileged.

The core areas for public sector should include energy, transport, communication, irrigation, elementary education and literacy, health and population control, it said.

Plans at a glance:

First Plan 1951-56. The first Plan with a total outlay of Rs. 2378 crore was a rather haphazard venture, as the Planning Commission had no reliable statistics to work upon. Besides, the plan had to be co-related to the prevailing activities of various government departments. The result was patchwork of isolated projects. All the same, the plan had a national character and was based on a rational hypothesis. It laid emphasis on agriculture, irrigation, power and transport so as to provide an infrastructure for rapid industrial expansion in future. The plan turned out to be more than a success, mainly because it was supported by two good harvests in the last two years.

Second Plan 1956-61. The Second Plan (1956-61) was a big leap forward. It laid special stress on heavy industries. The industrial policy resolution was amended so as to shift the primary responsibility for development on the public sector. Private sector was left to handle consumer industries. But the great quantity of imports that the Plan envisaged in both public and private sectors, practically denuded India's accumulated sterling balances (as much as Rs. 500 crore) in two years and compelled the country to seek extensive foreign aid. Agriculture and small-scale industries remained sluggish, without adding any momentum to development.

Third Plan 1961-66. The Third Plan rode on a wave of high expectations following overall growth of the Indian economy in the first two plan periods. The Third Plan aimed at establishing a self-sustaining economy. Internal resources having been strained to the utmost, the Plan had to rely on heavy foreign aid.

During the Third Plan, national income (revised series) at 1960-61 prices rose by 20 per cent in the first four years but registered a decline of 5.6 per cent in the last year. Per capita real income in 1965-66 was about the same as it was in 1960-61.

A growing trade deficit and mounting debt obligations led to more and more borrowings from the International Monetary Fund. The rupee was devalued in June, 1966 to little purpose, as it soon turned out. The Third Plan had become stuck.

Interim Planning. The Third Plan having gone awry, planning itself had become discredited in the eyes of many and demands were made from different quarters to declare a Plan holiday. But neither the Government nor the Planning Commission admitted failure. They refused to fall in with the demand for a Plan holiday and proceeded to draw up the Fourth Plan as from 1966-67.

But the economy had so far degenerated that the Fourth Plan could not be started in time, that is to say, in 1966. Instead, as a stop-gap arrangement planning was made annual. The Annual Plans continued from 1966 to 1969—1966-67, 1967-68 and 1968-69.

Fourth Plan 1969-74. The Fourth Plan (1969-74) officially commenced on April 1, 1969 with the publication of the draft plan. *Growth with stability* was the main objective of the Plan. Agriculture was expected to lead the growth with a rate of 5 per cent per annum. Such a growth in agriculture would set up a chain reaction in the economy. The target for the growth rate of industry was set at about nine per cent per annum. Altogether the national income was expected to increase at the rate of 5.5 per cent per annum. Allowing for the increase of population at the rate of about 2.5 per cent, the per capita income was expected to increase at the rate of 3 per cent per annum or about 16 per cent in the Fourth Plan period.

Fifth Plan 1974-79. The Fifth Plan draft as originally drawn up was part of a long term *Perspective Plan* covering a period of 10 years from 1974-75 to 1985-86.

The perspective plan attempted to co-ordinate various sectors of the economy in terms of the new slogan *Garibi Hatao* (Remove Poverty). The long term rate of growth which the economy was expected to achieve on a self-sustaining basis was put up at 6.2 per cent per annum.

By the time the Fifth Plan was approved by the National Development Council (Sept. 1976) its premises had become obsolete and the total outlay had to be increased from Rs. 37,463 crore to 39,303 crore.

This belated attempt had an inglorious end in another 6 months, when the Janata party came to power. They scrapped it unceremoniously.

The Janata government reconstituted the Planning Commission and announced a new strategy in planning. The strategy involved a change in objective and pattern. The objective was laid down as *Growth for Social Justice* instead of *Growth with Social Justice*—a distinction without a difference. The new pattern was the *Rolling Plan* which merely meant that every year the performance of the Plan will be assessed and a new Plan based on such assessment will be made for the next year—a continuous planning, in fact. The rolling plan started with an annual plan for 1978-79 and as a continuation of the terminated V plan.

Sixth Plan (1980-81—1984-85) was formulated

Throw out The White Elephants

Weeding out of plan schemes and projects which do not make economic sense is among the three broad policy correctives recommended by the Planning Commission to make the eighth plan an integral part of macro-economic management.

Such corrections are needed, especially in the public sector component of the eighth plan, to make the process of planning consistent with the government's commitment to tackle the imbalances in the overall economic management, the Commission has stressed.

According to the approach paper for the eighth plan, the second taks is to rationalise plan expenditure by a process of consolidation and co-ordination of schemes now scattered as a number of more or less similar "half-hearted thrusts at the same target".

The third is to ensure that sectors which clamour for increased plan outlays try to generate net additional resources to the extent possible through non-inflationary measures.

Further, those who, by virtue of government polices, have surpluses in excess of their approved investment, should divert them to sectors which need higher outlays but cannot raise financial resources from within their own sectors, the paper stressed.

According to the Commission, the most glaring problem that faces planning is that the essence of the planning process has been eroded.

"If planning is to be a prioritised application of resources to the needs of development, the process has to keep enough operational efficiency to make adequate and timely investments in priority programmes and to have reserves to take up new initiatives in short, medium and long term planning." it said.

The paper said this meant that every new project or programme taken up had to fit into a well-coordinated overall strategy for the concerned sector.

The annual plan is very often reduced to the task of fixing percentage increases, the percentage itself getting fixed as a residuary item after the Finance Ministry satisfies the powerful claims of the non-plan sector, the paper said.

In this context, the Commission has underlined the need for an innovative approach that would generate enough net resources within the public sector.

Such resources could, besides carrying the current levels of outlays and performance generally, also provide for a substantial increase in outlay and operational support for the critical goals which should form the core of the public sector plan, the paper said.

In the energy sector, the commission has identified, among such goals, the elimination of power shortages by the end of the eighth plan and the initiation of advance measures for maintaining self-sufficiency in power.

Further, it said, hydel generation should have a minimum share of 40 per cent in the total installed capacity by the end of the ninth plan.

The Commission has suggested a critical analysis of the uses of petroleum products to restrain the growth in their consumption without hampering economic development. For instance, it said the railways should directly shift to electric locomotives instead of replacing steam engines with diesel ones.

Another goal is the elimination of the flaring of associated gas by the end of the eighth plan ('92–97). The commission has also stressed the need to extend the coverage of the integrated rural energy project to at least one block in every district by the end of the plan.

In the infrastructure sector, the paper calls for strengthening of the road network through a major renovation effort and building of rural roads to all weather standards.

after taking into account the achievements and shortcomings of the past three decades of planning. For the Sixth Plan actual expenditure stood at Rs. 109,291.7 crore (current prices) as against the envisaged total public sector outlay of Rs. 97,500 crore (1979-80 prices) accounting for a 12 per cent increase in nominal terms. The average annual growth rate for the Sixth Plan works out to 5.2 per cent, which is equal to the targetted growth rate for the plan period.

The Seventh Plan 1985-90 which envisaged an aggregate outlay of Rs. 348,148 crore with a public sector outlay of Rs. 180,000 crore ended with an average rate of growth of the gross domestic product (GDP) at 5.3 per cent per annum, which was well above the targetted rate of 5 per cent.

The final year of the Seventh Plan (1989-90) saw the growth of national income by 4 per cent, largely contributed by the secondary (manufacturing) and services sector. The annual average growth of the Seventh Plan has been put at 5.3 per cent, almost equalling the growth rate of the Sixth Plan.

BANK DEPOSITS SOAR

The outstanding deposits and credit of all scheduled commercial banks as on last Friday of June 1991 stood at Rs. 1,98,744 crores and Rs. 1,30,321 crores respectively.

There were 15 centres, each accounting for more than Rs. 1,000 crore deposits. Deposits of these centres put together accounted for 42.8 per cent of the total deposits. In the case of credit, nine centres had credit exceeding Rs. 1,000 crores each. Outstanding credit of these centres put together accounted for 47.2 per cent of the total credit.

The top hundred centres arranged according to size of deposits had 18.9 per cent of the total bank offices accounting for 59.1 per cent of the total deposits. Similarly, the top hundred centres arranged according to size of bank credit constituted 18.5 per cent of the total bank offices accounting for 66.6 per cent of the total bank credit.

The rate of growth in deposits was 14.5 per cent during the year ended June 30, 1991 against 17.7 per cent in the corresponding period last year.

Among the bank groups, foreign banks registered the maximum deposit growth at 41 per cent followed by private sector banks (19.3 per cent).

SBI Tops: Deposits of State Bank of India and its associates grew by 16 per cent while those of nationalised banks expanded by 11 per cent.

Nationalised banks as a group contributed 59.1 per cent of the aggregate deposits and SBI and its associates accounted for 27.6 per cent. The shares of other bank groups were: 6.5 per cent for foreign banks, 2.4 per cent for regional rural banks and 4.4 per cent for private sector banks.

Bank credit registered a growth of 13.7 per cent as against 18.7 per cent in the preceding year. Among the bank groups private sector banks ranked first, with a growth of 15.9 per cent, followed by State Bank of India and its associates with 15.5 per cent. The growth rate achieved by nationalised banks was 13.4 per cent, while foreign banks registered a growth rate of 13.8 per cent. The regional rural banks registered a negative growth rate of 1.4 per cent.

Credit: The nationalised banks accounted for 55.1 per cent of the total credit, while State Bank of India and its associates had a share of 31.2 per cent. Foreign banks, regional rural banks and other private sector banks had shares of 7.2 per cent, 2.8 per cent and 3.7 per cent respectively.

Among the major States, the growth rate of deposits was the highest in Maharashtra (20.9 per cent) followed by Jammu and Kashmir (18.8 per cent), Andhra Pradesh and Tamil Nadu (18.6 per cent each) and Kerala (18.5 per cent).

In respect of outstanding bank credit, the growth rate was the highest in Madhya Pradesh (24.5 per cent), followed by Tamil Nadu (15.7 per cent) and Gujarat and Maharashtra (15.1 per cent each).

As many as 798 new offices were opened in the country during the year ended June 1991, of which 71 per cent were located in rural centres. The nationalised banks accounted for about 58 per cent of the new offices opened during the year.

Banking in India is controlled by the **Reserve Bank of India,** established on April 1, 1935 in accordance with the provisions of the Reserve Bank of India Act, 1934. The Bank was originally constituted as a shareholders' institution with a share capital of Rs.5 crore. In the context of the need for close integration between the Bank's policies and those of the Government, the entire share capital of the Bank was transferred to the Government from January 1, 1949 in terms of the Reserve Bank (transfer to public ownership) Act, 1948.

The Imperial Bank of India established in 1921 is its predecessor. Punjab National Bank established in 1894 was the first wholly Indian Bank.

'Commercial banks' and 'Co-operative banks' are the two main categories of banks in the country. Another category, the Regional Rural Banks is akin to commercial banks.

Commercial banks fall into four classes–banks in the public sector, those in private sector, foreign banks and regional rural banks. There are 28 banks in the public sector, comprising the State Bank of India and its 7 associate banks, 14 commercial banks in the private sector nationalized in July 1969, and 6 nationalized in April 1980.

The public sector banks account for 90 per cent of the total banking business in India. Foreign banks number 21 with a total of 136 branches and specialise in the field of foreign trade and international banking. There are 38 Private Sector banks and 196 Regional Rural Banks. Co-operative banks serve mainly the needs of agriculture and allied activities, rural based industries and to a lesser extent, trade and industry in urban centres.

Another classification is that of scheduled and non-scheduled banks. Scheduled banks are those included in the second schedule to the Reserve Bank of India Act and the conditions for inclusion are (i) the bank must have a paid-up capital and reserves of an aggregate value of not less than Rs. 5 lakh, (ii) it must satisfy Reserve Bank that its affairs are not conducted in a manner detrimental to the interests of its depositors and (iii) it must be a company as defined in the Companies Act, 1956. Scheduled banks enjoy the facility of obtaining accommodation from the Reserve Bank and of being considered for grant of authorised dealer's licence to handle foreign exchange.

Non-scheduled banks are banking companies other than those included in the second schedule.

The Agricultural Refinance Corporation was established on July 1, 1963 in order to emphasise the developmental and promotional role assigned to it in addition to refinancing. The corporation was renamed as the Agricultural Refinance and Development Corporation in 1975. On July 12, 1982, the ARDC was merged into the newly formed *National Bank for Agriculture and Rural Development (NABARD)* which was established to provide credit for the promotion of agriculture, small-scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas with a view to promoting integrated rural development.

Deposit Insurance and Credit Guarantee Corporation: In the wake of certain bank failures, the Deposit Insurance Corporation was established on January 1, 1962. With the taking over on July 15, 1978 of the Credit Guarantee Corporation, the corporation was renamed Deposit Insurance and Credit Guarantee Corporation. Deposits have been insured upto Rs. 30,000 per account. The rate of premium is 4 paisa per annum for every Rs. 100/- of the total amount of assessable deposits. The chairman is a Deputy Governor of the Reserve Bank.

Industrial Development Bank of India: The Industrial Development Bank of India (IDBI) was established as a wholly owned subsidiary of the Reserve Bank in July 1964. From February 16, 1976, the IDBI was delinked from the Reserve Bank. The Reserve Bank however, has nominees on the Board of Directors of the IDBI.

Unit Trust of India: The UTI commenced operations in July 1964, the Reserve Bank having subscribed 50 per cent of its initial capital of Rs. 5 crore. The share capital held by RBI was transferred to the IDBI on its being delinked from the Reserve Bank in February 1976. The Reserve Bank nominates a trustee on the Unit Trust's Board of Trustees.

Exchange Control was introduced in India in 1939 mainly to conserve non-sterling area currencies. Later on, the Foreign Exchange Regulation Act of 1947 was enacted. This Act was replaced by a comprehensive legislation, the new FERA–Foreign Exchange Regulation Act, 1973 enacted in 1974. The RBI is now vested with additional powers to regulate the investments and the trading commercial and industrial activities in India of foreign companies (other than banking companies), foreign nationals, and non-resident individuals; also the holding of immovable property abroad and the trading, commercial and industrial activities abroad by residents have been brought under its control.

Industrial Finance: The major post-independence institutional innovations of relevance to long and medium-term finance for industry are the following:

1) Industrial Finance Corporation of India (IFCI) – 1948

2) State Financial Corporations (SFCs) – 1952 onwards.

3) Industrial Credit and Investment Corporation of India (ICICI) – 1955.

4) Life Insurance Corporation (LIC) – 1956.

5) Refinance Corporation for Industry – 1958, since merged with IDBI in 1964.

6) Industrial Development Bank of India (IDBI) – 1964.

7) Unit Trust of India (UTI) –1964.

8) Industrial Reconstruction Corporation of India (IRCI) – 1971, now Industrial Reconstruction Bank of India.

9) General Insurance Corporation (GIC) – 1972.

10) Export-Import (Exim) Bank – 1982. Reserve Bank was directly involved as promoter or full owner in IFCI, SFCs, IDBI and UTI. For a long time, senior officials, Governors or Deputy Governors were chairmen of the boards of these institutions. It was only in 1976 that these institutions were delinked from the Reserve Bank. However, the Reserve Bank continues to provide loans and advances to the term-lending institutions as also to guide and advise them.

INDUSTRY BUOYANT

The Government of India announced a New Industrial Policy (NIP) on July 24, 1991. The new policy was aimed at rejuvenating the dormant industrial sector and contained many significant features.

The new policy abolished industrial licensing for all projects except for a short list of industries related to core sector. According to industry circles, the new industrial policy would open up a new chapter in India's economic history. The radical reforms announced in the new policy offer a great deal of freedom to business houses and enterpreneurs to make their investment decisions.

One of the most striking features of the NIP is the substantive reduction in the role of the public sector in the future industrial development of the country. It may be recalled that the Industrial Policy

Resolution of 1956 had accorded primacy to the public sector by reserving exclusively as many as 17 major industries (known as schedule A). Further, with a view to accelerating the industrial development, 12 other industries (known as schedule B) were identified for the entry of the public sector. It was also provided that the state will have an overriding power to start any industry other than these 29 specified industries, if the needs of planning so required or for other important reasons.

Under the NIP, the position will distinctly change as the priority areas for the future growth of the public sector have been mainly confined to (i) essential infrastructural goods and services; (ii) exploration and exploitation of oil and mineral resources; (iii) technology development and building up of manufacturing capabilities in crucial areas; and (iv) manufacturing of products based on strategic considerations, such as defence equipments etc. Consequently, only eight industries are now exclusively reserved in the core industrial sector, and having regard to their weightages, it would be evident that the role of the public sector has been reduced by almost 50 per cent of what it used to be earlier. As a corollary, as much as three-fourths of the industrial activities are now being made available for the private sector.

To make things attractive to foreign investors, provisions relating to royalty payments have also been relaxed. Now it is possible to make lumpsum payment of Rs. one crore and royalty of five per cent on domestic sales and eight per cent on exports, subject to total payments of eight per cent on sales over a 10 year period from the date of agreement or seven years from commencement of production. These payments will be net of taxes and calculated according to standard procedures.

On the other hand, there are apprehensions, that after this initial cautious response, the NIP will result in misallocation and wastages of scarce capital and physical resources. The fact that there are no restrictions on the entry, except in the reserved areas of public sector and the negative list of 18 industries, wherein licensing is compulsory, will induce over-zealous entrepreneurial response causing creation of excessive capacities.

The first industrial policy resolution in India wa presented in 1948. Since then a number of policy announcements have been made. They are the Industries (Development and Regulation) Act 1951, the Industrial Policy Resolution of 1956, the MRTP Act 1969, the Licensing Policy Statement 1970, the Industrial Policy Statement of 1973, 1977 and 1980.

In 1985 and 1986, the Government provided a positive thrust to the process of liberalisation.

Small Scale Units: A new industrial policy for SSIs and tiny sector were also announced on August 6, 1991. The most important feature of the policy is the four-point scheme to provide financial support to the SSI sector while promising to set up an agency to monitor and ensure that the credit demand of SSI's is fully met, it has been decided to allow equity participation by other industrial undertaking in the SSI, not exceeding 24% of the total shareholding. The policy also for the first time promises to meet 100% credit demand of the small and tiny industries.

SSIP Highlights: Legislation to ensure payment of SSI bills; Act to limit new/non-active partner's liability to the capital invested; Credit demand of the SSIs to be fully met, a cell to be created to ensure this; Permission to other units to invest upto 24 per cent in the SSI; Launch of factoring services by SIDBI; Tiny sector investment limit raised to Rs. 5 lakh; Relaxation to the tiny sector from certain unspecified labour laws; National equity fund scheme scope widened; Composite loans under the single window scheme also to be given by banks; Tiny sector to be accorded priority in government purchase programme; Services sector to be recognised as tiny sector; Priority to SSIs and tiny units in allocation of indigenous raw materials; Promise to deregulate and debureaucratise small and tiny sector; PSUs and NSIC to help market prodcuts through consortia approach both domestically and internationally; Package for handloom and handicraft sector; Janata cloth scheme to be replaced by a new scheme which will provide funds for loom modernisation; Compulsory quality control for products that pose risk to health and life; Investment limit of ancillary units and export-oriented units raised to Rs. 75 lakhs.

NRI Participation: The Indian government also decided to allow Non-Resident Indian (NRI) investors upto 100 per cent equity in certain industries.

The announcement was made by India's minister of state for finance Rameshwar Thakur at a seminar in New York in October 1991 attended by over 600 NRI's and professionals from banking and investment companies.

The minister also announced that the NRI's portfolio investment limit has been raised from five per cent to 24 per cent.

It was also announced that a special cell is being established in the Bombay stock exchange to help sort out any complaints NRI's may have.

The move on 100 per cent equity would cover more than 30 industries listed in the 3rd annexure of the government's new industrial policy.

So far, foreign investment in those industries was limited to 51 per cent. The exception is being made for NRI's and not other foreign investors.

Investors purchasing Indian development bonds could borrow against such bonds in foreign exchange, the facility which had not been available before.

PSUs Flounder: Central public sector undertakings performed badly in 1990-91 as their net profit declined sharply by 37.28 per cent as compared to the previous year.

According to the 1990-91 annual report of the

Industrial Policy Highlights

Industrial Licensing

• Industrial licensing abolished for all projects except for a short list of industries related to security and strategic concerns, social reasons, hazardous chemicals and overriding environmental reasons and items of elitist consumption.

•Industries reserved for the small scale sector continue to be so reserved. The list specified above, for licensing, will not be applicable to SSIs.

• Existing registration schemes (Delicenced Registration, Exempted Industries Registration, DGTD registration) abolished.

• Entrepreneurs now will only be required to file an information memorandum on new projects and substantial expansions.

• New Broad Banding Facility to existing units.

• System of phased manufacturing programme run on an administrative case by case basis not applicable to new projects.

• Convertibility clause for term loans from Financial Institutions no more applicable for new projects.

Public Sector Undertakings (PSUs)

•Areas where security and strategic concerns predominate will continue to remain reserved for PSUs.

• Sick PSUs will be referred to BIFR.

• PSUs shareholding will be offered to mutual funds, financial institutions, general public and workers.

• Professional management for PSUs with greater autonomy.

Foreign Investment/Import of Capital Goods

• In projects where imported capital goods are required, automatic clearance will be given in cases where foreign exchange availability is ensured through foreign equity.

• With effect from 1-4-1992, in projects where imported capital goods are required, automatic clearance will be given if the CIF value of imported capital goods required is less than 25 per cent of total value (net of taxes) of plant and equipment, upto a maximum value of Rs. 2 crore.

• Approval for direct foreign investment upto 51 per cent foreign equity in specified high priority industries.

• To obtain access to international markets, majority foreign equity holding upto 51 per cent equity will be allowed for trading companies primarily engaged in export activities. Though the thrust would be on export activities, such trading houses shall be kept at par with domestic trading and export houses in accordance with the Import-Export Policy.

Foreign Technology Agreement

• Automatic permission for foreign technology agreements in specified high priority industries upto a lumpsum payment of Rs. 1 crore, 5 per cent royalty for domestic sales and 8 per cent for exports, subject to total payments of 8 per cent of sales over a 10 year period from date of agreement or 7 years from commencement of production. Prescribed royalty rates are net of taxes.

• For other industries, other than specified above, automatic permission will be given subject to the same guidelines as above, if no foreign exchange is required for any payments.

• No permission necessary for hiring of foreign technicians or foreign testing of indigenously developed technologies.

MRTP Act

• Act will be amended to remove the threshold limits of assets in respect of MRTP companies and dominant undertakings.

• Restrictions on acquisition/transfer of shares will go.

• Newly empowered MRTP Commission will be set up to initiate investigations suo moto or on complaints received from individual consumers in regard to monopolistic, restrictive and unfair trade practices.

5 PSUs in Fortune 500'

Five Indian companies, all of them from the public sector, have found a place in the latest Fortune list of the 500 largest industrial corporations in the world. The companies are Indian Oil (144th), ONGC (278th), Hindustan Petroleum (371st), Coal India (428th) and Bharat Petroleum (474th).

Indian Oil, with sales of $9.42 billion and profits of $406 million, has slipped down from its last year's 106th position. ONGC is the only company among the five which has maintained its position while the others have slipped, though marginally.

However, even the Indian giants are pygmies when compared to the world biggies. The sales of General Motors, which has maintained its number one position for the second year, are $125 billion with losses of $1.9 billion. At $180 billion, GM's assets are over 30 times that of Indian Oil and the US giant has over 7.6 lakh employees, as compared to about 34,000 in IOC. GM is followed by Royal Dutch/Shell, Exxon, Ford Motor, IBM, Toyota, IRI, British Petroleum, Mobil and General Electric.

India with five companies in the list ranks way below the US (164), Japan (111), Britain (43) France and Germany (30 each).

Though the companies are ranked by sales, the ranking is quite different as far as profitability is concerned. De Beers Consolidated Mines, though 335th in terms of sales, is tops when it comes to return on sales at 35 per cent, while Lyondell Petro-chemicals has posted the highest returns on assets and shareholders' equity.

Several multinationals with Indian subsidiaries or other connections feature in the list. These include Daimler Benz (11th),, Unilever (21st), Siemens (24), Nestle (25), Philips (28) and Proctor and Gamble (41). While the overall sales of the Global 500 are up by 10 per cent to $5 trillion, the profits are down by 17 per cent. However, the biggest benefiaries over the last year have been the oil companies which enjoyed higher profits due to the rise in oil prices during the Gulf crisis.

Rank 1990		Sales $ Million	Profits $ Million	Employees No.
1	General Motors (US)	125,126.0	(1,985.7)	761,400
4	Royal Dutch/Shell Group (Britain/Neth.)	107,203.5	6,442.1	137,000
3	Exxon (US)	105,885.0	5,010.0	104,000
2	Ford Motor (US)	98,274.7	860.1	370,400
5	INT'L Business Machines (US)	69,018.0	6,020.0	373,816
6	Toyoto Motor (Japan)	64,516.1	2,993.3	96,849
11	IRI (Italy)	61,433.0	926.5	419,500
10	British Petroleum (Britian)	59,540.5	3,013.1	116,750
8	Mobil (US)	58,770.0	1,929.0	67,300
7	General Electric (US)	58,414.0	4,303.0	298,000
INDIAN COMPANIES				
106	Indian Oil	9,422.7	406.30	34,028
278	Oil & Natural Gas Commission	4,996.0	N.A.	N.A.
352	Hindustan Petroleum	3,670.0	120.3	9,552
427	Coal India	3,105.4	N.A.	N.A.
451	Bharat Petroleum	2,744.6	N.A.	N.A.

department of public enterprises, the 189 Central public enterprises earned a net profit of Rs. 2,730.27 crores during 1990-91 against the net profit of Rs. 3,748 crores in 1989-90.

The report tabled in Parliament said the net profit earned was much lower than the targeted Rs. 3115.09 crores during 1990-91.

It is said significant variations from the targeted profit occurred in the petroleum, coal and lignite, fertilisers and heavy engineering sectors.

Among the 189 enterprises, 105 enterprises however earned a net profit of Rs. 4,918.60 crores during 1990-91. But it was much lower than the targeted Rs. 5018.64 crores for the year. It was also lower by Rs. 671.35 crores when compared with the net profit of Rs. 5,589.95 crores earned by these enterprises during 1989-90.

The report said 84 enterprises incurred losses. The net profit as a percentage of capital employed declined to 2.66 in 1990-91 from 4.62 in 1989-90.

Most Profitable: Sectorwise analysis indicated that the petroleum sector led among the profit-making sectors with a net profit of Rs.2,275.03 crores earned in 1990-91 compared with Rs. 2,896.33 crore earned during the previous year.

The petroleum sector is followed by power (Rs. 666.01 crores), financial services (Rs. 281.14 crores), minerals and metals (Rs. 196.98 crores), telecommunication services (Rs. 179.43 crores) and trading and marketing (Rs. 164.55 crores).

The non-oil sector earned a net profit of Rs. 455.24 crores during 1990-91 against Rs. 863.37 crores in the previous year, showing a decline in profit of Rs. 410.13 crores (47.4 per cent). In the oil sector the profit in 1990-91 was Rs. 2,275.03 crores against Rs. 2,896.33 crores in 1989-90 showing a decrease of Rs. 621.30 crores (21.5 per cent).

Loss-makers: Among the loss-making sectors, fertiliser sector continued to head the list with Rs. 355.94 crores followed by consumer goods (Rs. 211.74 crores) and textiles (Rs. 193.61 crores).

The decline in net profits during the year amounting to around Rs. 1,000 crores, was due to sharp upward revision in the exchange rate of various foreign currencies amounting to Rs. 600 crores and the Gulf crisis.

Top Twenty Industrial Groups*
(Turnover Rs. Crores)

	1990–91
1. Tata	12032.74
2. BK-AV Birla	5388.48
3. Thapar	2442.96
4. Bajaj	2265.57
5. Ambani	2215.02
6. R.P. Goenka	1977.60
7. Mallya	1714.25
8. GP-CK Birla	1655.87
9. Chhabria	1643.50
10. Mahindra	1517.80
11. GM Modi	1499.01
12. Arvind Mafatlal	1302.49
13. Nanda	1278.76
14. L.N. – S.K. Birla	1160.80
15. Godrej	1079.00
16. K.K. Birla	1067.67
17. Hinduja	1023.25
18. Walchand	941.36
19. TVS	915.00
20. MP Birla	843.00

* As per Economic Times figures

Assets (31-3-1990)*
(Rs. Crores)

1. Birla	6974.06
2. Tata	6621.38
3. Reliance	3141.24
4. JK Singhania	1828.74
5. Thapar	1762.52
6. Mafatalal	1296.55
7. Bajaj	1228.37
8. Modi	1192.34
9. Larsen & Toubro	1130.33
10. M.A. Chidambaram	1032.23
11. TVS	929.05
12. Hindustan Lever	924.85
13. ACC	909.13
14. Sreeram	799.17
15. ITC	742.19
16. United Breweries	715.71
17. ICI	674.46
18. Bangur	657.41
19. Kirloskar	633.07
20. Walchand	625.75

* As per Economic Times figures

According to the budgetary estimates for 1990-91, 64 public enterprises were required to generate Rs. 6,180.57 crores as net international resources for funding their plan investments.

The report said 65 enterprises had incurred cash losses in 1990-91 amounting to Rs. 1,500.23 crores against a cash loss of Rs. 1356.69 crores incurred in the previous year by the same enterprises.

It said 40 of the 45 taken over enterprises had incurred a net loss of Rs. 446.49 crores during 1990-91 compared to a net loss of Rs. 475.16 crores incurred by the same enterprises during 1989-90.

Gross Sales: The report said gross sales at current prices increased from Rs. 1,00,407.00 crores in 1989-90 to Rs. 1,11,587.33 crores in 1990-91 showing an increase of Rs. 11,180.33 crores 11.13 per cent.

However, gross sales as a percentage of capital employed declined to 108.52 in 1990-91 from 123.87 in 1989-90.

The PSUs showed improvement during 1990-91, in the manufacture of major items like steel, coal, lignite, aluminium, zinc, iron ore concentrate, manganese ore, electricity, refinery, natural gas, industrial explosives, petroleum products, crude, phosphatic fertilisers and basic chemicals.

The report said there had been a fall in production of iron ore pellets, blister copper, bricks and fire brick, crude oil, machine tools, pesticides, refined edible oils and vanaspati, footwear, textiles and garments.

Industrial Growth: According to the 1990-91 annual report of Department of Industrial Development, during the year 1990-91 upto December 1990, the industrial sector showed a growth of 8.9 per cent, over the same period in 1989-90.

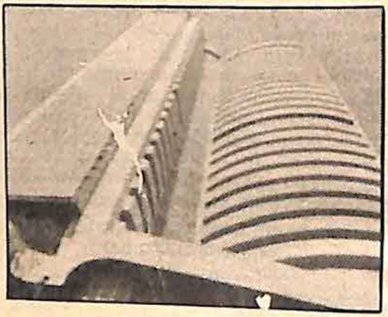
In the manufacturing sector the industry groups which have shown a good performance in the Seventh Plan period include electrical machinery, chemicals and chemical products, paper and paper products and basic metals.

However, groups like beverages, tobacco products, jute and wood and wood products, showed a decelerated performance.

During April–December 1990, mining and quarrying showed a growth rate of 1.7 per cent while power generation showed a growth rate of about 7.1 per cent, the report said.

In the manufacturing sector, the growth rate has increased to 10.4 per cent in April–December, 1990 compared to 4.4 per cent over the same period during the previous year.

Approvals for 1989-90 at Rs. 11,863 crores exceeded the capital approvals for the previous year (1989-90) by 46.1 per cent. Approvals in 1990-91 (April–December) at Rs. 9,564.1 crores showed a decline of 13.8 per cent compared to the same period in 1989-90.



India has Forty

India's stock market—the 23rd largest in the world recorded an impressive growth in the 1980s, market capitalisation going up from $ 7.5 billion in 1980 to $ 23 billion in 1989.

In terms of numbers of individual shareholders, the Indian market is the third largest in the world, behind only those in the United States and Japan. The total number of share-holders in India has been estimated at 40 million by the Bombay Stock Exchange (BSE). The BSE's latest supplement on "Present position of stock markets in India," forming part of its Official Directory has revealed that for 1,847 companies, there are 23.88 million shareholders, as at the end of March, 1989.

Though 2,275 companies have been listed on the Bombay Stock Exchange as at the end of March 1989, the exchange has covered only 1,847 companies for its study on book shareholders. The BSE supplement states that precise information about "actual" shareholding population in India is difficult to arrive at because of the multiplicity of shareholdings by individuals. The share holding population comes to about 6 per cent of the total population.

Of the 1,847 companies studied by the BSE, 26 companies had more than a lakh shareholders each. Another 45 companies had share-holders ranging from 50,000 to one lakh. The frequency distribution of companies has been as under:

No. of shareholders		No. of companies
Upto	1,000	476
1,001	5,000	527
5,001	10,000	350
10,001	25,000	307
25,001	50,000	116
50,001	1,00,000	45
1,00,001	and above	26
Total		1,847

Reliance Petrochemical is the topnotcher in terms of the number of shareholders, to be followed by Reliance Industries, UTI (Master-shares), Gujarat Narmada Valley, L.ML, Tata Iron & Steel, Orkay Silk Mills, Tata Engg. Loco., Modi Cement and Ispat Profiles.

Out of the 1,92,999 companies, both public limited and private limited and including government companies, that were at work as on December 31, 1989, Delhi accounted for 17.7 percent. More importantly Delhi accounted for a substantial 34.1 percent or Rs.18,610.10 crore of the aggregate paid-up capital of all companies, which stood at Rs. 54,499 crore.

Although Maharashtra topped in interms of companies at work – 44,783 or 23.2 percent of all companies at work in the country – it stood third in terms of paid up capital. West Bengtal had 27,802 companies with a paid up capital of Rs. 9,240 crore and Maharashtra accounted for Rs.4,917 crore. Two other states, Tamil Nadu (7.6 percent) and Gujarat (6.2 percent), each had over a five percent share of all the companies at work.

The poor geographical spread of the corporate sector in India and the industrial backwardness of many states is brought out by the fact that the four states and one union territory mentioned above accounted for 69.1 percent of all companies at work, and 67.9 percent of the paid-up capital.

That our public sector is really large is confirmed by the fact that though government companies numbered only 1,155, while non-government companies numbered 1,91,844, the former accounted for a paid up capital of Rs. 42,443 crore and the latter for a paid up capital of Rs. 12,057 crore.

Million Shareholders

Statewise distribution of companies Limited by Shares at work.

(Capital in cores)
As on 31-12-1989

State/Union Territory	No.	Paid-up capital
1. Andaman & Nicobar Island	7	3.3
2. Andhra Pradesh	9,894	4,589.3
3. Arunachal Pradesh	74	6.3
4. Assam	1,841	468.8
5. Bihar	3,044	1,959.7
6. Chandigarh	1,747	238.6
7. Dadra & Nagar Haveli	32	0.1
8. Daman & Diu	32	0.5
9. Delhi	34,101	18,610.1
10. Goa	887	167.7
11. Gujarat	11,887	1,350.5
12. Haryana	1865	279.0
13. Himachal Pradesh	908	83.6
14. Jammu & Kashmir	878	95.5
15. Karnataka	8,985	2,088.7
16. Kerala	3,765	1,175.5
17. Madhya Pradesh	4,688	1,508.2
18. Maharashtra	44,783	4,917.7
19. Manipur	70	12.4
20. Meghalaya	140	221.2
21. Mizoram	9	9.1
22. Nagaland	175	67.0
23. Orissa	1,937	2,174.6
24. Pondicherry	564	36.3
25. Punjab	4,888	206.1
26. Rajasthan	4,142	503.3
27. Tamil Nadu	14,763	2,948.0
28. Tripura	29	17.4
29. Uttar Pradesh	9,082	1,520.7
30. West Bengal	27,802	9,240.3
Grand Total	1,92,999	54,499.5

LIC'S NEW RECORD

For the first time, the annual premium of the Life Insurance Corporation of India crossed Rs. 5000 crore during 1990–91. The public sector giant with 42 million policy holders achieved a growth rate of 17% for the number of policies and 21% for the sum assured in the above period.

The Corporation sold 86,48,192 lakh new policies for a sum assured of Rs. 28192 crore under individual insurance in 1990–91.

Insurance in India has a chequered history. Prince Dwarakanath Tagore was associated with the first life insurance company in India—the Oriental Life Insurance Society (1818). Sir Pherozhah M. Mehta was one of the founders of the Oriental (Bombay). Lala Lajpat Rai and Pt. K. Santhana were the partners of Laxmi Insurance Company. Pt. Motilal Nehru, Dr. M. A. Ansari, Sri Srinivasa Iyengar, Netaji Subash Chandra Bose—these are some of the great names associated with various insurance companies.

After independence, the Avadi Congress in 1955, adopted 'socialistic pattern of society' our goal. This was followed by the nationalisation of the Imperial Bank (1955) and the Life Insurance business (1956).

There were a lot of critics and skeptics. Life Insurance industry has not been nationalised anywhere else in the world. The only time it was attempted in France, the experiment failed and the industry was returned to private sector, the critics said.

They were proved wrong. The LIC not only survived and thrived but also inspired many other Afro-Asian countries to go in for similar corporations. From Rs. 283.07 crore of new business in 1956 the Corporation steadily grew.

Fourteen years after its formation the Corporations' business crossed Rs. 1000 crore in 1970-71. The year 1975-76 saw the business crossing Rs. 2000 crore. In 1981-1982 the achievement was Rs. 3000 crore. By 1984-85 it reached 5000 crore and in 1988-1989 it touched a new height of Rs. 17239 crore.

The LIC has been steadily adding to its assets and the life fund which was Rs. 365 crore as on 1-9-1956 crossed the 10,000 crore mark in 1984-1985.

With the growth of the funds the complexities of investing it have also increased many times. Because of the sheer volume of the funds handled by it, the investment operations of the Corporation have a synergic effect on the market. Hence, in every investment move the Corporation makes, it has to keep in mind the impact it will have on the economy of the country and the investing public. L.I.C.'s investment in government securities is about 56%. In fact, a total of 83% of the funds generated by L.I.C. is utilised either directly or indirectly by government agencies in the development of socially oriented ventures or for schemes like housing, electricity, water supply etc. aimed at improving the quality of life. The Corporation's investment in private sector comes to only 10% of its total funds.

As the Life industry has to operate in the context of fixing the price (premium) in advance and incur the costs later, the mechanism of profit sharing has been evolved. This is done by the valuation of assets and liabilities and passing on the surplus to the policy holder in the form of bonus—an addition to the contractual sum assured to be paid. L.I.C.'s record in this respect has indeed been one of progressive improvement.

The bonus rates have steadily increased from Rs. 12.80 and Rs. 16.00 for 1000 sum assured for endowment and whole life policies respectively in 1957 to Rs. 66 and Rs. 82.50 for the same type of policies in 1989. In addition to this a terminal bonus is also paid to policy holders from the year 1979 onwards. The hitherto biennial actuarial valuation for declaring bonus has been made an annual affair from 1986 onwards.

L.I.C. has a well organised marketing set up in the country and has an effective system for training its agents. Select agents are encouraged to attain professional excellence through setting up client servicing centres, installation of microprocessors for servicing their policy holders, etc. A hierarchy of Club Membership has been introduced for agents showing consistency in their performance. Some of the L.I.C. agents, on the basis of their highly rated performance have qualified for participating in the international gathering of Million Dollar Round Table Meet held in U.S.A.

Computerisation has improved all its operations, especially settlement of claims. On an average, each working day the Corporation settles 5000 claims for Rs. 2.8 crore.

In 1989, LIC entered into Mutual Fund business, launched Housing Finance Company and opened an offshore company at Bahrain.

The Corporation also liberalised its rules regarding non-forfeiture provisions and Own Your Housing Schemes. Through its innovative scheme called *Jeevan Dhara* and *Jeevan Akshya*, the Corporation offered plan for retirement for non pension-able salaried class, professional, self employed businessmen, etc. It extended insurance protection to the landless agricultural labourers all over the country.

General Insurance

The general insurance business transacted by various private insurance companies was nationalized in 1973 and the General Insurance Corporation was formed. The erstwhile private companies were grouped together as four subsidiaries of the newly formed corporation—National Insurance Co. Ltd., The New India Assurance Co. Ltd., The Oriental Insurance Co. Ltd. and United India Insurance Co. Ltd.

The GIC showed a growth rate of 27.8 per cent in its domestic and foreign operations, recorded a profit of Rs. 482 crore in 1990–91 as against Rs. 371 crore in the previous year. Each of the four subsidiary companies declared dividends of 35 per cent. The industry conributed Rs. 175 crore to the national exchequer.

A comprehensive Crop Insurance scheme was introduced by G.I.C. in 1985 and a modified medical insurance scheme called Mediclaim in 1986. 1988 saw the introduction of a Product Liability and Public Liability Insurance.

In 1990 the GIC launched a new scheme called 'Bhavishya Arogya' to provide health security for individuals in their old age.

The total business of General Insurance industry both domestic and foreign operations during 1990–91 amounted to Rs. 2913 crore as against Rs. 2279 crore in the previous year. Of this the domestic business accounted for Rs. 2796 crore. The industry settled 15,388 motor accident claims and paid Rs. 46.24 crore as compensation.

The Employees State Insurance Corporation (ESIC) serving the industrial and allied workers in India, proposed to raise the wage ceiling for coverage from Rs. 1600 to Rs. 3000 a month in 1991.

CHANGE IN TRADE POLICY

The Government on August 6, 1991 announced its policy of decanalisation of several items of export and import as part of the packages of major trade policy reforms unveiled in July.

In the case of exports 16 items are being decanalised immediately and these include castor oil, polythelene, coal and coke, colour picture tubes and sub-assemblies of TVs containing colour picture tubes, ethyl alcohol or rectified spirit, exposed cinematographic films and video tape cinema films, khandsari molasses, mill scale scrap, bimetal ore (black iron ore) with manganese contents, railway passenger coaches and locomotives, raw jute, mesta and jute cuttings, sugar, iron ore of Redi origin and low grade bauxite of west coast origin.

In the case of imports, six items are being decanalised and placed on open general licensing (OGL), while 14 items are being decanalised and listed in Appendix 3, whereby they would be available for import against Eximscrips.

The imported items to be put under OGL include silkworm, sodium borate, old ships, fluorspar, platinum and palladium.

The 14 decanalised imported items to be made available against Eximscrips include jute pulp, manila hemp, raw sisal fibre, raw jute, alkyl benszene, floppy diskettes, lauric acid, oleic acid, stearic acid, palmitic acid, palm fatty acid, palm acid oil, other fatty acids, pure or mixed including acid oils and soap stocks.

The government would continue to support the development of export houses and trading houses as instruments for promoting exports. Thus for the current fiscal year, it has been decided to widen the range of items which could be imported against additional licences by export houses, trading houses and star trading houses. The range would now be the same as that of Eximscrips.

Effective from April 1, 1992 additional licences would stand abolished and export houses, trading houses and star houses would receive additional Eximscrips at the rate of five per cent of the free on board value of exports. The details of the scheme are being worked out, it added.

Trading houses with 51 per cent foreign equity for promoting exports would be eligible for all the benefits available to domestic exports and trading houses in consolance with the import-export policy.

Government has also decided to allow established exporters to open foreign currency accounts in approved banks and allow exporters to raise external credits, pay for export related imports from such accounts and credit export proceeds to such accounts. This would facilitate payments by exporters for their essential imports.

The Board of Trade has been reconstituted and would be activated once again. The office of the chief controller of imports and exports is being redesignated as the directorate general of international trade.

The manual of office procedure and the functions performed by various port offices would be comprehensively reviewed and a new charter of duties and functions would be drawn up.

For 100 per cent export-oriented units and units located in export processing zones, they would be eligible for Eximscrips at the basic rate of 30 per cent applied to net foreign exchange earning.

The statement said that the dury applicable on domestic tariff area sales from EOUs/EPZ units is being reduced to 50 per cent of the normal customs duty subject to the duty payable not being less than the excise duty on the sale product. The extent of DTA sales allowed would be in accordance with their entitlement.

DTA sales would be permitted in the ratio of 25:75 in relation to export sales in case of units whose use of indigenous raw materials is more than 30 per cent of production. In all other cases, the ratio of permissible DTA sales to export sales would be 15:85.

In order to encourgage exporters to set up EOUs or EPZ units the net foreign exchange earned by such units could be clubbed with the earnings of their parent/associated companies in the DTA for the purpose of according export house, trading house or star trading house status for the latter.

The international price reimbursement scheme (IPRS) for supply of steel to exporters would be extended to EOUs and EPZ units. It said all proposals within the automatic approval parameters for import of capital goods of such units would be clearned within two weeks.

Besides, the following specific concessions to eous/ epz units were also extended:

(i) Allowing entry of imported raw materials on provisional assessment basis to expedite customs clearance (ii) Permitting units under the EPZ and EOU schemes to supply/transfer finished goods among themselves (iii) Replacement of multiple bond by a single bond for obtaining import clearance (iv) Increasing the list of items under the special imprest licence scheme on selective basis (v) Expediting supplies from the DTA, without payment of excise duty, by issuing pre-authenticated CT-3 form booklets to EOUs and (vi) Clarifying that containers stuffed in EPZs and EOUs are not to be reinspected at other points, as long as seals are intact.

The government has also restated the role of public sector trading organisations like the State Trading Corporation and the Minerals and Metals Trading Corporation, which had traditionally depended heavily on canalised trade. They would be reoriented to achieve the objectives of emerging as international trading houses capable of operating in a competitive milieu.

As state governments have a major role to play in achieving enchanced exports, the government asked them to exempt exports from all fiscal levies in order to ensure that exporters were capable to compete effecively in world markets.

The statement said the policy changes now being implemented imply a substantial reduction in the extent of licensing and in the number and types of licenses. Supplementary licences for import of items in Appendices 3 (except for small scale industries and manufacturers of life saving drugs and equipment), 4 and 9 of the Import-Export Policy 1990-93 have been abolished.

The statement said that with the shift of many items which are now on OGL to the limited permissible list, the policy for import of raw materials, components and other inputs needed for production has been simplified.

It said that it is the policy of the government to move to a situation were imports of essential raw materials and components needed for industrial production are regulated through appropriate tariffs.

The medium terms objective, the statement said, is to progessively eliminate licensing and quantitiative restrictions on capital goods and rawmaterials/components, so that all these items could be

HIGHLIGHTS

- Advance licensing system strengthened and streamlined.
- Substantial manufacturing activity no longer a necessary proviso under the advance licensing scheme.
- A new scheme of transferable advance licence for general currency area introduced in thrust areas.
- Procedure for obtaining bank guarantee and legal undertaking from different categories of exporters streamlined and liberalised.
- Disposal of materials imported against advance licenses by way of replenishment simplified.
- Substantial reduction in the extent of licensing and in the number and types of licences outlined.
- Supplementary licences for several items abolished.
- Sixteen items of exports decanalised.
- Six items of imports decanalised and put under OGL.
- Sixteen import items decanalised and put under replenishment so as to import them against Eximscrips.
- Export houses, trading houses, star trading houses given leeway to import wide range of items against additional licences.
- Established exporters allowed to open foreign currency accounts in approved banks.
- Chief Controller of Imports and Exports Office redesignated as the Directorate General of International Trade.

placed on OGL except for a small carefully defined negative list. This shift is proposed to be achieved over a three to five-year period.

Trade Deficit: According to the data on foreign trade statistics released by the Directorate General of Commercial Intelligence and Statistics, India's exports during 1990-91 increased by 17.5 per cent to Rs. 32,527 crore from Rs. 27,682 crore in the preceding years. In dollar terms, the growth rate worked out to nine per cent.

Provisional figures place India's imports during 1990-91 at Rs. 43,171 crore as compared with Rs. 35,412 crore in 1989-90, implying a growth rate of 21.9 per cent. In dollar terms, the growth rate was 13.1 per cent.

As a result, trade gap during 1990-91 widened to Rs. 10,644 crore from Rs. 7,730 crore last year.

Imports excluding oil (petroleum, oil and lubricants) amounted to Rs. 32,465 crore during 1990-91 as compared to Rs.29,220 crore last year. Non-oil imports thus displayed an increase of 11.1 per cent. In dollar terms, it was 3.1 per cent. In other words, oil imports were of the order of Rs. 10706 crore, as against Rs. 6,192 crore in 1989-90, marking a rise of as much as 73 per cent. Trade deficit, excluding POL products, declined to Rs. 876 crore from Rs. 2,236 crore during 1989-90.

Year	Exports	Imports	Trade Balance
	(in crores of rupees)		
1980-81	6711	12549	–5838
1981-82	7806	13608	–5802
1982-83	8803	14293	–5490
1983-84	9771	15831	–6060
1984-85	11744	17134	–5390
1985-86	10895	19658	–8763
1986-87	12452	20096	–7644
1987–88	15674	22244	–6570
1988-89	20232	28235	–8003
1989-90	27681	35416	–7735
1990-91 (P)	32527	43171	–10644

Exports in 1990-91 fell far below the original target of Rs. 36,000 crore, let alone the revised projection of Rs. 37,360 crore.

Among the thrust sectors on the export front (which accounts for over 75 per cent of the total exports), textiles, engineering goods, marine products, leather and leather manufactures, chemicals and plantations performed well during 1990-91.

Textile exports increased by 29 per cent from Rs. 6,513 crore to Rs. 8,397 crore. Encouraged by this an export target of Rs.10,085 crore has been fixed for 1991-92, up by 20 per cent over the level of 1990-91.

This could largely be assigned to the excellent performance of ready-made garments; exports increasing from Rs. 3,500 crore to Rs. 4,640 crore or by 33 per cent.

Exports of agricultural commodities too recorded a large increase of 29 per cent from Rs. 4,460 crore to Rs. 5,741 crore. Among agricultural products, exports of cotton increased almost tenfold from Rs. 80 crore in 1989-90 to Rs. 753 crore last year. Exports of spices fell by 14 per cent to Rs. 235 crore from Rs. 274 crore.

Performance of gem and jewellery, on the other hand, was discouraging, mainly a result of import curbs on exports. Exports dropped by a nominal three per cent from Rs. 5,479 crore to Rs. 5,311 crore, mainly on account of lower import of pearls, precious and semi-precious stones.

The share of POL products in total imports has been rising over the years from 14.0 per cent in 1986-87 to 17.7 per cent in 1989-90 and further to almost 25 per cent in 1990-91.

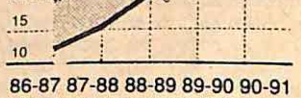
There exists scope for reduction in imports of POL by proper exploitation of known reserves of oil. As of now, the country exploits only about 2.5 per cent of its known oil reserves annually.

Imports of fertiliser accounts for about five per cent of total import bill. It is possible to bring this proportion down by encouraging higher indigenous production through price rationalisation.

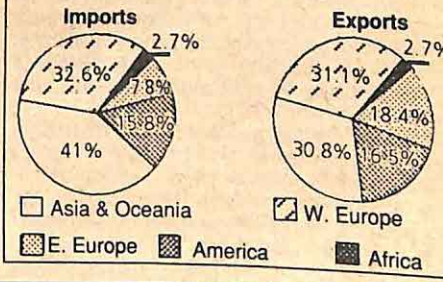
India's Foreign Trade

Trade gap increases to Rs. 10,644 cr, up by 39.2% since 1986-87.

Rs thousand crores



Foreign trade region wise; Asia emerged as largest supplier of imports in 1990-91.



RESERVATIONS FOR THE POOR

The Government on September 25, 1991 formally issued an order giving effect to the Cabinet decision on the issue of reservation of jobs for the socially and educationally backward classes (SEBCs) and others not covered under any of the reservation schemes. This takes the overall quota of jobs in the reserved category to 59.5 per cent in the case of the two top classes of government jobs and to 62.5 per cent in the case of class 'C' and 'D' jobs where the handicapped also enjoy a three per cent reservation. In addition ex-servicemen enjoy 10 to 20 per cent reservation in specified jobs.

The office memorandum issued by the Department of Personnel and Training amends the "Mandal" order of the V.P. Singh Government issued on August 13, 1990 which had led to widespread student protests and a spate of immolations. The amended order was also filed before the Supreme Court as an annexure to the three-page affidavit submitted by the Government to the Court spelling out its views on this question.

The major difference between the new Government Order and that issued by the V.P. Singh Government is that in the 27 per cent reservations in civilian government jobs for the SEBCs as defined by the Mandal Commission, preference is to be given to the poorer sections among them. Only if poor candidates are not available for these reserved posts will they be thrown open to others in the category of SEBCs.

The other important amendment relates to the additional 10 per cent reservation in government posts for the poor among the upper castes and the minorities and all groups not covered by the benefit of reservation in any of the existing schemes.

The new reservation policy emphasises the economic criteria but for the moment it is silent on how it will determine the economic status of the people seeking jobs under the reserved categories. The criteria for determining the poorer sections of the SEBCs or the other economically backward sections of society are to be issued separately, the Government has stated.

It is also clear that the posts filled by the SEBCs recruited in open competition on merit will not be adjusted in the 27 per cent quota. In this the Congress Government's decision is in tune with the policy spelt out by the National Front Government headed by Mr. V.P. Singh.

The package on reservations with an in-built economic criteria was finalised after a round of discussions between the Prime Minister and leaders of different political parties. This was followed by an all-party meeting on September 21 where a broad consensus had emerged favouring reservations with an emphasis on economic backwardness. The effort had been to hammer out a policy which would deliver social justice in an atmosphere of social harmony.

The new deal in reservations is also in tune with the Congress(1) manifesto and the Government's policy as enunciated in the President's address to the joint session of Parliament after the new Government assumed office. The President, in his address, had clearly stated that the Government was committed to special measures in favour of the socially and educationally backward classes and that it would give pereference to the poor in this section, while also ensuring benefits of reservation to the poor in the other groups.

The three operative parts of the Government's office memorandum issued are:

"1. Within the 27 per cent of the vacancies in civil posts and services under the Government of India reserved for SEBCs, preference shall be given to candidates belonging to the poorer sections of the SEBCs. In case sufficient number of such candidates are not available, unfilled vacancies shall be filled by the other SEBC candidates".

"2. Ten per cent of the vacancies in civil posts and services under the Government of India shall be reserved for other economically backward sections of the people who are not covered by any of the existing schemes of reservation."

"3. The criteria for determining the poorer sections of the SEBCs or the other economically backward sections of the people who are not covered by any of the existing schemes of reservations are being issued separately."

In discussions at various levels the Congress(1) has considered the totality of the Mandal Commission recommendations on reservations, but the Government so far has not extended reservations to education and other sectors.

Minimum Wages: The Minimum Wages Act will be amended very soon to provide for revision every two years instead of five years as at present, the Minister of State for Coal, Mr. P.A. Sangma, who is holding additional charge of Labour, told the Rajya Sabha on September 9, 1991.

Mr. Sangma was responding to clarifications sought by members on his statement made on the report of the national commission on rural labour. He was 'personally in favour' of having a Central legislation on protection and welfare of agricultural labour. He was also in favour of revising the minimum wages of the agricultural labour from Rs. 15 to 20 a day.

Replying to a discussion on the working of the Labour Ministry, Mr. Sangma said the Government was actively considering appointing a minimum wage commission and bringing in an amendment to the National Wages Act.

Giving a categorical assurance that the rights and interests of workers would not be compromised following the announcment of the new liberalised industrial policy, Mr. Sangma said "whatever policies are implemented, these would not be at the cost of the working class'.

Mr. Sangma announced the appointment of a national commission on bonded labour, a programme to improve working in industrial training institutes and simplifying procedures for export of manpower.

The wage commission proposal was meant to cover employees of Central Government and public sector undertakings.

Manpower exports had been badly hit by the Gulf war, but the situation was improving, with the April 1991 figures showing a 52 per cent increase compared to the corresponding period in the previous year. The remittances in 1989-90 were of the order of Rs. 3,865 crores. The Government would try to keep this up and simplify procedures for workers to go abroad.

The World Bank had approved $280 millions for upgrading and modernising ITIs. A sum of Rs. 441.49 crores was already released. Under the scheme, 119 ITIs would be upgraded and 90 new ITIs for women set up.

According to the latest information available, the number of job-seekers on the live register of employment exchanges was up from 301 lakh (as at the end of December 1988) to 332 lakh (as at the end of February 1990). Of this, 271 lakh were male (82 per cent of the total job-seekers) and 61 lakh female (18 per cent).

As at the end of December 1989 a total of 175 lakh educated unemployed (about 53 per cent of the total unemployed) were registered with these exchanges.

The labour force is projected to grow by 37 million during the Eighth Plan (1990-95) and by another 41 million in the Ninth Plan (1995-2000). Employment opportunities would have to grow at a rate of more than four per cent per annum to reach the goal of near-full employment by 1995 and by over three per cent if this goal is to be accomplished by the end of the decade.

Employment in Organised Sector 1988

Employment	million
Public Sector	
Central Govt.	3.38
State Govt.	6.80
Quasi Govt.	5.95
Total*	18.33
Private Sector	7.42
Grand Total	25.75

Note: Data in this Table and the next cover all establishments in public sector and all non-agricultural establishments in private sector employing 25 or more persons. Private establishments employing 10 to 24 workers are also covered on a voluntary basis from 1966.

* Including Local Bodies.

Organised Sector Industry-wise

End of March	1987
	'000s
Public Sector	18,028
Agriculture, etc.	557
Mining & quarrying	942
Manufacturing	1,862
Electricity, gas & water, etc.	791
Construction	1,184
Wholesale & retail trade, etc	134
Transport, storage and communications	2,972
Services*	9,587
Private Sector	7,369
Agriculture, etc	848
Mining & quarrying	91
Manufacturing	4,409
Electricity, gas & water, etc.	40
Construction	58
Wholesale & retail trade, etc	277
Transport, storage and communications	52
Services*	1,588
Total employment	25,397
Agriculture, etc	1,405
Mining & quarrying	1,033
Manufacturing	6,271
Electricity, gas & water, etc	831
Construction	1,242
Wholesale & retail trade, etc	411
Transport, storage and communications	3,024
Services*	11,175

Note: Data is this Table and the next cover all establishments in public sector and all non-agricultural establishments in private sector employing 25 or more persons. Private establishments employing 10 to 24 workers are also covered on a voluntary basis from 1966.

* Including financing, insurance, real estate etc. and community social & personal services.

Factory Employment

	1986*
Andhra Pradesh	598
Assam	99
Bihar	470
Gujarat	664
Haryana	226
Jammu & Kashmir	26
Karnataka	492
Kerala	295
Madhya Pradesh	416
Maharashtra	1,211
Orissa	121
Punjab	300
Rajasthan	222
Tamil Nadu	827
Uttar Pradesh	571
West Bengal	926
Delhi	195
Total (incl. others)	7,795

Note: This Table and the next show the average daily number of workers at work, and not the total number on pay-roll.
*Provisional.

Employment in Selected Industries

	1986* '000s
Food Products	1,105
Beverages, tobacco, etc.	163
Cotton textiles	1,123
Other textiles	487
Textile products	170
Wood & products, etc.	191
Paper & products, printing, etc.	314
Leather & products	67
Rubber, plastics, petroleum & coal products	222
Chemicals & products	514
Non-metallic mineral products	513
Basic metals & alloys	597
Metal products	281
Electrical Machinery, etc.	366
Other machinery	526
Transport equipment	480
Other manufacturing industries	77
Electricity	117
Repair services	338
Others	144
Total	7,795

Note: This Table and the next show the average daily number of workers at work, and not the total number on pay-roll.
* Provisional.

Employment Exchange Statistics 1989

	'000
Number of exchanges*	849
Registrations	6575.8
Placements	289.2
Applicants on live register*	32,776

*At the end of year; from 1980 onwards including University Employment Information & Guidance Bureau.

Educated Job-Seekers

End of December	1988 '000s
Matriculates	1,017
Under-graduates	4,420
Graduates & above	2,920
Total educated	17,512

GEARING UP OIL PRODUCTION

The Oil and Natural Gas Commission in 1991 proposed a foreign exchange investment of nearly $ 2,000 million by way of loans in the Eighth Plan period.

This is expected to accelerate efforts for enchanced domestic production of crude at Bombay offshore, and help make up the current shortfall of nearly three million tonnes towards an annual output of 46 million tonnes by the end of the Plan period.

The amount would include the $ 450 million World Bank loan sanctioned for the gas flaring reduction project at Bombay High, besides a $ 300 million loan from the Asian Development Bank and an additional $ 350 million from the Japanese banks.

Efforts are also simultaneously on to negotiate with the banks for a greater flexibility in the application of the loans so as to optimise the availability of foreign exchange resources in achieving the Plan targets.

Production Target: The loan development targets expect to achieve a cumulative production of 183 million tonnes at the end of the Eighth Plan, even as the annual production is expected to touch 46 million tonnes in the last year of the Plan period.

This is against the 1990-91 production of 30.35 million tonnes, with its target shortfall of 2.65 million tonnes following the closure of 30 of the 100 sick wells in Bombay High, and the expected 27 million tonnes in 1991-92.

Clearly this has meant that ONGC has had to revise the earlier conservative position and agree to enhance the reserve-to-production ratio from 23:1 to 15:1 in order to match the world average.

Oil Reserves: With ONGC having nearly 750 million tonnes of recoverable reserve, the Eighth Plan production target of 46 million tonnes per year is expected to be feasible with the production being stepped up in all the onshore and offshore fields.

The ONGC proposals for utilising the $ 2,000 million, envisages major investment in the development of satellite fields including Neelam and Mukta at Bombay offshore, besides the L-II and L-III structures in Bombay High North (BHN) and Bombay High South (BHS) respectively.

The World Bank-aided gas flaring reduction project is also part of the Plan proposal.

The development of the L-II reservoir, mainly present in the northern part of the Bombay High structure, envisages the construction of five well platforms, drilling and completion of 42 wells, a process platform "NQP", inter-connecting submarine pipelines and a gas feeder line.

Reservoir stimulation studies for this reservoir estimate an additional production of 16.545 million tonnes of oil and about eight billion cubic metres of gas.

Gas Production: In addition, the project would help increase the utilisation of 2.69 billion cubic metres of gas over the entire life of the project.

The additional development of L-III, known as the enhanced oil recovery project for Bombay High South (BHS), anticipates drilling additional infill wells to improve recovery.

Reservoir stimulation studies have indicated that an additional production of 40.004 million tonnes of oil and 18 billion cubic metres of gas can be obtained from it. The processing and other related facilities planned would help in enabling the use of 36 billion cubic metres of gas currently being flared, for the entire life of the project.

The Rs. 2000-crore gas flaring reduction project, meanwhile, is expected to help reduce peak gas flaring by about 11 million cubic metres per day, achieving a direct monetary saving of Rs. 2.77 crores each day. By AD 2010, the total reduction is estimated to be around 36 billion cubic metres.

Meanwhile there is apprehension that crude oil production could slide by another 10 to 12 million tonnes forcing the country to import that much more oil at a cost of over Rs. 2,000 crore if private drilling companies on contract jobs with ONGC close down operations.

Some of the drilling companies operating in Bombay High with chartered rigs from foreign countries have been hard hit by the 1991 rupee exchange rate adjustment with the US dollar and other foreign currencies as they have to bear the increased cost of lease rentals for the rigs.

The existing policy of the Government restricts compensation to be allowed to Indian contractors on account of exchange rate fluctuation for operating costs only.

Definition of operating cost has inexplicably excluded lease rentals which is very much a part of the operating cost and accepted as such under the Income Tax Act, according to the Federation of Engineering of Industries of India.

Oil import for Rs. 10,000 cr

Oil imports for 1991-92 is estimated to be over 32 million tonnes, valued at over Rs. 10,000 crore – about four million tonnes more than that in 1990-91, according to the 1990-91 annual report of the Petroleum Ministry.

The gross requirement of import during 1991-92 is estimated at 18.6 million tonnes for crude and 14.53 million tonnes of petroleum products, the report said.

Compared to this, the import of crude in 1990-91 was 20.783 million tonnes and of petroleum products 8.60 million tonnes.

The profit before tax and profit after tax likely to be generated by the oil industry during 1991-92 are Rs. 3,328 crore and Rs. 3,051 crore.

Oil Production: Total oil production in the country has declined in the past few years due to various problems such as blockades, agitations and closure of a number of oil wells.

ONGC, as the major oil producer in the country, accounts for 80 per cent of the production and its thrust in exploration and production is through a mixture of its own rigs and by charter hire of equipment through Indian and foreign contractors, both onshore and offshore.

The charter hire of rigs by ONGC is through "global tenders" and since it is a global tender, ONGC is paid by the Government in foreign currency like US dollars. Like the foreign companies ONGC does not suffer from the exchange rate fluctuations.

At present, about 27 rigs are in operation in Bombay High; ten of these are operated by the ONGC itself and 17 by chartered hire rigs.

Out of the 17 rigs, three are operated by foreign companies and 14 by Indian contractors.

And out of this 14, ten are on lease rental by private drillers and four are owned. Some of the rigs owned by the private companies are hightech of Tatas, Mahindra and Mahindra and Essar group.

The SCI is also operting a rig on a lease rental.

At present a rig costs as much as $ 30 to 35 million or nearly Rs. 100 crore, a sum most private sector oil firms could easily afford and even if some could, the Government would find it difficult to release the foreign exchange for the same because of its scarce resources, a private sector drilling company source said.

Power from the Atom: The Department of Atomic Energy has scaled down its target of producing 10,000 mw of power from the atom by AD 2000, Dr. P.K. Iyengar, Chairman of the Atomic Energy Commission (AEC) said on September 25, 1991.

Addressing a news conference at the international seminar on small and medium nuclear reactors in New Delhi, Dr. Iyengar said it was scaled down because "inputs were not available at the proper time".

He said the department now expected to produce 9,000 mw by AD 2001; of this 2,000 mw is expected to come from two 1,000 mw reactors that the Soviet Union is to set up in Tamil Nadu.

Seven thousand mw of the revised 9,000 mw goal will come from indigenous reactors, he said. The original Rs. 30,000 crore estimate for the 10,000 mw target has now been scaled down to Rs. 16,000 crore.

Responding to questions about the possibility of the Soviet offer not coming through because of the recent developments there, Dr. Iyengar said at present there is "no change," in the proposed programme.

He said Indian engineers are discussing design details with their Soviet counterparts and, if the project goes according to the plan, the first 1,000 mw will be set up in 1998-99.

Dr. Iyengar also said Egypt,Syria and some other countries have expressed interest in India's offer of setting up 5 mw research reactors in other countries.

Research reactors are very good for training of manpower in different aspects of nuclear technology.

Energy From Waves

The country's first wave energy project has gone on stream at Vizhinjam near Trivandrum. The 150 mw project implemented by the wave energy group attached to the Ocean Engineering Centre, IIT, Madras in association with the State Harbour Engineering Department is sponsored by the Union Department of Ocean Development.

About 80 kw of electricity produced by the generator has been fed intothe KSEB grid.

The wave energy project works on the oscillating water column principle. A barrier which solely depends on waves and consisting of a pre-fabricated concrete caisson has been installed some 400 m away from the Vizhinjam shore.

The caisson is a 9.1 m into 13 m hollow chamber which is 15 m high. It weighs about 2,000 tonnes. While three of the caisson's sides are closed, the fourth, facing the sea, is open. The air in the hollow caisson will be displaced as soon as waves enter it. This will move an air turbine placed above the caisson for power generation.

The turbine rotates only in one direction, irrespective of the direction of air flow. The air turbine of the Vizhinjam project is known as Wells'turbine as it was developed by Prof. Wells of Belfast University.

For its initial start, the turbine draws power from a general grid. But when the turbine becomes functional, the power it generates from the waves will be fed into the grid.

The scientists behind the project claim that the wave energy unit is the first of its kind in the world because it is a multipurpose scheme and floats on the sea bed.

From the ecological and environmental points of view, it is the best bet, they said. The unit hardly leaves any waste.

The biggest advantage of the project is that it depends on the inexhaustible waves. This means that power generation is possible throughout the year, though not uniformly.

RICE EXPORTS TO RISE

Despite a likely shortfall of about six million tonnes in the targeted kharif foodgrain production, the Government expects that the overall production during 1991-92 would be comparable with the one in 1988-89 when the total production was 170.5 million tonnes. The United Nations' Food and Agriculture Organisation (FAO) forecasts that India's rice exports increasing steadily during the last few years, could well rise further in the wake of devaluation of the rupee, the minimum export price for it in local currency having been left unchanged.

Encouraged by the consistently higher average of production in the last few years, the target of foodgrains output for the year 1990-91 was fixed at 176.5 million tonnes. Of this, rice and wheat take the maximum share of 128 million tonnes (rice 73.5 million tonnes and wheat 54.5 million tonnes). Coarse grains and pulses account for the remaining 48 million tonnes of production aimed for the year. This was, however, only marginally higher than the goal fixed for 1989-90 at 175 million tonnes.

The new year's target has been fixed by the Planning Commission and the Agriculture Ministry after receiving information from the State Governments and based on the usual parameters of weather, availability of inputs, besides of course the recent trends in production in different States. In fact, the new target is based on the average production of foodgrains of the last three years, which reflects the allround efforts to boost output.

Although the drought of 1987 slightly dipped the overall calculations, after suitable adjustments the final figure was fixed at 176.5 million tonnes. The comparative production figures for 1987-88, 1988-89 and 1989-90 respectively are 140.25 million tonnes, 170.5 million tonnes and 173 to 174 million tonnes.

The overall target is only 0.8 per cent more than last year's target of 175 million tonnes and the targets of individual crops are also only marginally higher. Rice production for the year 1990-91 was fixed at 73.5 million tonnes, a mere 1.5 million tonnes more than the 1989-90 level. However the actual production likely to be achieved was three per cent less than the previous year's target of 72.5 million tonnes. Similarly, during 1990-91 wheat production, which is expected to fall short of the 1989-90 target of 54 million tonnes by 1.5 million tonnes, has been pegged at a marginally higher rate of 50,000 tonnes for next year.

Oil seeds production for 1990-91 has been fixed at 18 million tonnes. The targets for other cash crops are sugarcane 220 million tonnes, cotton 11.5 million bales and jute and mesta 9 million bales.

Projection for 2000: With the necessary infrastructural support and development of more productive technology. the Indian farming community could produce 225 million tonnes of foodgrains and other agricultural produce to feed the projected population of 97.2 crore by 2000 AD, say experts.

After the adoption of Five Year Plans, foodgrains production has increased by 236 per cent, sugarcane by 268 per cent, oilseeds by 225 per cent and cotton by 214 per cent. The per capita availability of grain, which was 140.7 kg in 1950-51, was 216.4 kg in 1989-90.

Farm development was due to the contribution by the government and the industry. While the former developed profitable technology through its research institutes and by offering procurement prices, the industry chimed in with inputs such as fertilizer and pesticides. About 80 per cent of the fertilizer needs of the country were met through production within the country.

India's achievements in the field of agriculture during the past few decades have been excellent. With only 25 per cent of world's cultivable land and 15 per cent of world's population, India boosted its agricultural growth rate from a mere 0.3 per cent in pre-independence year to 3.5 per cent after 1977. Productivity doubled, pushing up wheat production seven times and rice production three-fold.

The record food grain production of 152.4 million tonnes during 1983-84 was a signal achievement for India, receiving world-wide acclaim. What is particularly notable is that while the **First Green Revolution** of 1967-68 arose from introduction of new high-yielding varieties of Mexican wheat and dwarf rice varieties evolved by the International Rice Research Institute, the spectacular increase in production during 1983-84 was mainly owing to organized input management. Total production in 1984-85 was 146.2 m tonnes.

The year 1983-84 could thus be termed as the **Second Green Revolution** showing a massive increase in production through expansion in supplies of inputs and services to the farmers, extension and better management. As compared to the previous years, the increase in 1983-84 in the distribution of seed, fertilizer and pesticides showed a marked increase. The expansion in the provision of institutional credit for agriculture was also encouraging.

The highly notable and encouraging feature of this second Green Revolution is that whereas the

Milk Powder Output falls

Production of milk powder and infant milk in the country dropped by 10,000 tonnes in 1990 from 165,000 tonnes in the previous year.

However, the production of malted milk food increased from about 35,000 tonnes to 39,000 tonnes, according to the annual report of the Ministry of Food Processing Industries (1990-91).

The production of milk powder and infant milk had increased from 22,000 tonnes in 1970 to 1,65,000 tonnes in 1989.

About 30 per cent of the total milk production in the country was converted into milk products, of which ghee alone accounted for 85 per cent.

The production of butter, cheese, infant milk food, milk powder and malted milk food had tremendously increased after their imports were stopped in 1975-76.

The production of meat and meat products in the country touched 1.22 million tonnes worth Rs. 3,208 crores in 1990, accounting for 19.5 per cent of total livestock output.

About 54 per cent of meat and meat products were contributed by sheep and goats, while cattle and buffalo meat constituted 26 per cent. Pig and the poultry constituted seven per cent and 13 per cent respectively of the total output.

Of the total meat exports, buffalo meat alone constituted two per cent. India exported buffalo meat valued at more Rs. 90 crore in 1989.

Poultry industry has grown into an organised high productive agrobased industry contributing an estimated Rs. 1,300 crore annually employing a capital of around Rs. 1,000 crore.

The poultry industry was producing over 20,000 million eggs and 120 million broilers per annum.

The installed capacity of fruit and vegetable processing industries has increased from 7.08 lakh tonnes in December 1989 to about 8.94 lakh tonnes in December 1990.

The total number of licensed units under fruit products order, 1955 (FPO) increased from 3,629 in 1989 to 3,846 in 1990.

The exports of fruit and vegetable products during 1990 was 48,9000 tonnes valued at Rs.73,67 crore as compared to 63,967 tonnes valued at Rs. 79,48 crore in 1989.

Agricultural Production

	1988-89	1989-90	1990-91 (estimates) (000 tonnes)
Foodgrains	169,922	170,626	180,000
Rice	70,488	74,053	76,000
Jowar	10,171	12,915	12,500
Bajra	7,780	6,620	6,500
Maize	8,229	9,409	10,500
Ragi	2,410	2,782	2,900
Small millets	1,163	1,112	1,150
Wheat	54,110	49,652	55,000
Barley	1,722	1,468	1,800
Gram	2,718	2,723	3,000
Tur	5,129	4,232	4,300
Other pulses	6,002	5,680	6,350
Oilseeds			
Groundnut: Pode	9,544	8,400	7,500
Sesamum	667	620	700
Rapeseed & mustard	4,412	4,400	4,500
Linseed	349	400	425
Castorseed	417	475	550
Safflower	429	500	550
Nigerseed	173	210	220
Coconut (million nuts)	8,161	8,500	8,700
Cottonseed	3,006	3,924	3,535
Sunflower	397	550	550
Soyabean	1,501	1,710	2,000
Fibres			
Cotton lint (a)	8,744	11,414	10,400
Cotton: Trade est (a)	10,600	13,350	12,200
Jute (b)	6,710	7,112	7,600
Mesta (b)	1,149	1,239	1,400
Sannhemp	42	40	50
Condiments & spices			
Ginger: Dry	154	160	170
Pepper: Black	43	60	45
Chillies: Dry	609	750	800
Turmeric	340	350	270
Arecanut	246	250	240
Coriander	173	250	300
Cardamom	9	9	11
Garlic	242	260	275
Plantation crops			
Tea (million kg)	701	685	720
Coffee	217	150	173
Rubber	255	297	345
Fruits & vegetables			
Potato	14,893	15,500	16,500
Tapioca	4,470	5,700	6,000
Sweet potato	1,279	1,450	1,600
Banana	5,954	5,500	6,000
Cashewnuts	275	300	250
Onions	3,236	3,500	4,000
Miscellaneous crops			
Sugarcane	204,628	210,400	220,000
Tobacco	491	415	440
Guarseed	710	600	710

first Green Revolution of 1967-68 was confined mainly to a few progressive areas of Punjab, Haryana and West U.P., the second Green Revolution of 1983-84 witnessed tremendous progress in eastern and central States including West Bengal, Bihar, Orissa, Madhya Pradesh and U.P. where the growth rates had been relatively slow.

Rice Revolution: A green revolution in rice production has taken place quietly, in the last two decades, agricultural scientists say.

The period has witnessed a significant increase in the area under high yielding varieties, two fold increase in rice output and 70 per cent increase in yield per hectare.

The assertions come in the wake of a general impression that the Green Revolution was mainly related to the dramatic increase in wheat output in the wake of the introduction of the Mexican dwarf varieties in the sixties.

The revolution in rice production has come about with the efforts of the institutes like the Hyderabad-based Directorate of Rice Research. The Directorate, which is a prominent institute of the Indian Council of Agricultural Research (ICAR) celebrated its silver jubilee in November, 1990.

The Green Revolution in rice began in the early sixties when semi-dwarf varieties of rice from Taiwan were introduced in the country.

The short stature and strong stem characteristics of the improved plant type proved to be an insurance against lodging, a major problem limiting the productivity of most traditional rice varieties.

Besides, the short duration of the improved plant type coupled with its insensitivity to day-lengths ensured stable yield performance over a wide range of environmental conditions.

Added to this, the high fertiliser responsiveness of the new varieties enabled farmers for greater input use for more productivity.

Even as the new varieties, Taichung from Taiwan and IR8 the "miracle rice variety" from the Philippines, were finding natural spread all over the country, the ICAR set up the all India coordinated rice improvement project (AICRIP) which is now redesignated as the Directorate of Rice Research.

THE PLANTATIONS

India's plantation industry, flush with bumper harvests, hopes to take advantage of sweeping national economic reforms to boost tea, coffee and spice exports.

India's tea production in 1991 is expected to be 722 million kilogram, up from 716 million the previous year.

Coffee output is likely to touch 200,000 tonnes in 1991/92 (Oct/Sept) against 170,000 tonnes the year before.

India, the world's biggest pepper producer, may have a tough time selling this spice, with production in 1991/92 (Nov/Oct) expected to rise to 60,000 tonnes from 50,000 in 1990/91.

Planters hope for better ties with foreign trading houses after India's new government slashed red tape and allowed 51 per cent foreign equity participation in joint ventures.

They said that the new measures of the government could help their exports, with the devaluation giving them a competitive edge.

Planters said aggressive marketing in tea, of which India is the world's largest producer, gained urgency after India lost the top exporter slot to Sri Lanka in 1990.

India exported 210 million kgs of tea in 1990, 10 million short of the target set for the year. The target for 1991 is set at the same level but tea planters say actual exports this year may be just about the same as last year.

Coffee producers now plead that they should have the option to market their own produce.

The plantation sector employs 1.6 million workers, contributes Rs. 3,000 crore to the gross national product and brings Rs. 1,000 crore export earning.

Tea: India continues to be the world's largest producer, consumer and exporter of black tea. After achieving a record of 657 m kg in 1985, tea production in India declined to 535.69 m kg due to adverse agro-climatic conditions. Because of favourable weather, production in 1988-89 rose to 702.81 million kg (world production 87-88: 2287 m kg). India exported 209 m kg of tea during 87-88 (world exports: 975 m kg).

India continues to be the only producer which manufactures both CTC and orthodox tea in substantial quantities. India's production of CTC is estimated to be of the order of 475 m kg, most of which is consumed at home. The estimated Indian production of orthodox tea is 180 m kg, most of which is exported.

About 98% of the Indian tea production comes from Assam, West Bengal, Kerala and Tamil Nadu.

Indian tea is exported to a very large number of countries. In terms of volume and value the large buyers are USSR, UK, Arab Republic of Egypt, Iran and Iraq.

Rs. 6010 for a Kilo of tea

Harrisons Malayalam Limited on July 22, 1991 bought on behalf of the Japanese importer Mitsui Norin Co. Ltd, a consignment of 115 kg Darjeeling tea produced by Castleton.

The auction price of Rs. 6,010 per kg is the highest so far recorded for tea grown anywhere, the previous highest for Darjeeling tea being Rs. 5,001 per kg achieved in 1990.

It is learnt that his tea will be marketed in Japan and Taiwan (Tri-Brother Co. Ltd. is an agent of Nittoh Tea in Taiwan) as a gift item packed in bone china containers specially designed and produced in Italy by the porcelain manufacturers, Richard Ginori.

The table below gives figures of exports of tea from India for the last five years:

Year	Qty m kg	Value Rs. in crores	U/Price Rs/kg
85-86	222.92	674.24	30.25
86-87	203.70	619.23	30.67
87-88	209.00	592.37	31.76
89-90	202.81	904.72	42.90
90-91	199.48	1045.00	52.40

The Tea Board has been set up under the Tea Act, 1953 to promote the development of tea industry.

Coffee cultivation is mainly confined to the three southern states of Karnataka, Kerala and Tamil Nadu. The area has increased from 156,000 hectares in 1974-75 to 240,596 hectares in 1987-88. Non-traditional coffee growing states are Andhra Pradesh, Orissa and all the States in North Eastern region. About 98% of coffee holdings in the country are small holdings of less than 10 hectares.

India accounts for about 3% of the coffee produced in the world and about 1.41-1.6% of exports. Total production in 1988-89 was around 200,000 tonnes. During 1987-88 about 59,000 tonnes were consumed domestically and exports were of Rs. 300 crore in value. Instant coffee export was of the order of about 2500 tonnes.

Taking advantage of the absence of an international coffee export quota for coffee-growing countries, India exported a record quantity of 1,30,172 tonnes of coffee in 1989-90 valued at Rs. 359 crore. In 1988-89 it was 98,266 tonnes valued at Rs. 337 crore.

However, coffee production declined from a record of 2.15 lakh tonnes in 1988-89 to 1.2 lakh tonnes in 1989-90. The higher export 1989-90 was from coffee pool accumulations.

The Coffee Board consists of a Chairman and 32 other members representing the different interests.

Year	Production (Qty. in tonnes)
1981-82	149,490
1982-83	129,514
1983-84	104,325
1984-85	196,213
1985-86	122,300
1986-87	185,000
1987-88	120,000
1988-89	215,000
1989-90	120,000

Rubber is mainly grown in the southern states of Kerala, Tamil Nadu and Karnataka. The total area under rubber cultivation in India at the end of 1989-90 was 4,40,000 hectares. The target for expansion during the 8th plan period is 80,000 hectares comprising 65,000 ha in non-traditional areas alone.

Rubber plantations are predominated by small holders numbering 337,000 and they share about 77% of total rubber area. The average yield per hectare of rubber plantation is currently around 944 kg as against 771 kg in 1979-80.

The figures for production/consumption of natural rubber since 1984-85 are as under:

Year	Production (Tonnes)	Consumption (Tonnes)
84-85	187,000	220,000
85-86	200,465	235,440
86-87	219,520	257,305
87-88	235,000	287,000
88-89	229,172	313,830
89-90	297,000	341,000
90-91	330,000	370,000
91-92	365,000 E	—

E=Estimated

Since 1978, India has become a net importer of rubber since consumption has been increasing rapidly. The value of imports is indicated below:

Year	Import (Tonnes)
1984-85	32,408
1985-86	38,538
1986-87	40,228
1987-88	41,991
1988-89	51,367
1989-90	26,549
1990-91	31,699

(Imports are effected through State Trading Corporation of India Ltd.)

Spices: With a production of 20 lakh tonnes of different spices, India tops both in output and export.

Spices exports which fell by over Rs. 37 crores during 1990-91 due to the Gulf War and the resultant shipping and insurance difficulties, were all set to cross Rs. 300 crore mark in 1991-92.

Shipments in 1990-91 touched 97,291 tonnes valued at Rs. 238.67 crores as against 1.02 lakh tonnes valued at Rs. 275.76 crores in 1989-90.

The Spices Board came into being on 26th February 1986. The Spices Export Promotion Council and the Cardamom Board were merged to form the Spices Board.

Export of Spices from India 1989-90

Item	Qty (mt)	Value (lakhs)
Pepper	42,000	21,000
Cardamom (small)	750	1,125
Cardamom (large)	300	140
Chillies	8,000	1,495
Ginger	5,200	1,040
Turmeric	13,000	1,300
Curry Powder	3,000	500
Seed and other spices	14,000	1,400
Spice Oils & oleoresins	450	2,000
Total	86,700	30,000

Pepper: Among spices, pepper is India's major item of export—nearly 85 per cent. The main market is the US. Production during 1989 was around 45,000 tonnes of which 27,000 tonnes were expected to be exported. The export figure for 1987-88 was 38,524 tonnes—an all time record. Production in 1990 is expected to be between 60,000 and 65,000 tonnes. Of this, between 45,000 and 50,000 tonnes are likely to be exported.

Small Cardamom (Eletteria Cardamom) occupies an important position among the foreign exchange earning commodities. Presently production of this commodity is mainly confined to the three States of Kerala, Karnataka and Tamil Nadu. It is estimated that an area of 105,000 hectares is under cardamom cultivation in the country. The production during 1988-89 has been estimated at 4000 tonnes against 2900 tonnes in 1987-88.

There has been an increase in the unit value realisation for cardamom exports. Efforts are underway to increase productivity and reduce cost in order to meet competition from Guatemala.

Tobacco: The flue cured virginia tobacco which is the major export type of tobacco, constitutes 30-35 per cent of total tobacco production in the country. The main producing states are Andhra Pradesh, Karnataka and to a small extent, Maharashtra.

During 1988-89 a crop of 100 million kg of tobacco had been planned. Of this Andhra Pradesh accounts for 82 million kgs and Karnataka 18 million kg. An area of 72,383.6 hectares in Andhra Pradesh and 16,391 hectares in Karnataka have been registered for cultivation.

While India is the third largest producer of unmanufactured tobacco in the world, it ranks 5th as an exporter in the world market. Our exports of unmanufactured tobacco, however, have been declining over the years on account of stiff competition faced in the international market and anti-smoking campaigns in the West.

India's export of unmanufactured tobacco during 1987-88 was about 48,111 tonnes valued at Rs. 96.98 crore. The decline in terms of quantity and value was 28% and 33% respectively over 1986-87 figures of 66,824 tonnes valued at Rs. 144.87 crore.

The development of tobacco is looked after by the Tobacco Board, established by an Act of Parliament in 1975.

Tissue Culture Plantlets

The Spices Board has decided to give a major thrust to the production and supply of tissue culture plantlets of selected spcies which have export potential.

The Board estimated the requirement of planting materials of major spices in the Eighth Plan period at 314.13 lakhs for cardamom, vanilla and tree spices such as clove and nutmeg. Besides, the requirement of less fibre content ginger and high curcumin content turmeric has been put at 24,000 tonnes.

The use of bio-technology in the production of planting materials of different spices would ensure quality. Micro-propagation technique was available for cardamom, vanilla, ginger and turmeric. For pepper, clove and nutmeg, the methodology was being standardised through the bio-technology wing of the Spices Board, the Kerala Agricultural University, the National Research Centre for Spices and the Calicut University with the assistance of the Department of Bio-Technology.

According to the Chairman of the Spices Board, the cardamom planters should be convinced about the advantages of tissue culture plantlets over the seedlings. When that happened the Board could gradually withdraw the production of seedlings.

For large cardamom, the Board will supply necessary buds for production of tissue culture plantlets.

EDUCATION: THE NEW THRUST

The New Education Policy (NEP) of 1986 aimed at making it "an effective instrument for taking the country into the 21st century" is to be reviewed again – this time by a 16-member committee set up by the Central Advisory Board of Education (CABE), the highest decision-making body in the Ministry of Education.

An official press statement said that the committee, headed by the Andhra Pradesh Chief Minister, Mr. Janardhan Reddy, would take into consideration the report of the Ramamurthy Committee which had reviewed the NEP. It would also keep in mind the "related developments".

The NEP, introduced by theRajiv Gandhi Government has had a slow start partly for lack of funds and partly because of political opposition to it. The National Front Government, which had serious reservations about some of its aspects, had it reviewed by the Ramamurthy Committee. But by the time it gave its report, the Government fell.

The Minister for Human Resource Development Mr. Arjun Singh said, soon after taking over, that the NEP would be retained in its essence though he was not averse to making use of the Ramamurthy Committee's recommendations, if necessary. The review committee, which has been asked to give its report within two months of its first sitting, comprises among others the Tamil Nadu Education Minister, Mr. R.M. Veerappan, the Kerala Education Minister, Mr. E.T. Mohammed Basheer, educationist, Dr. Malcolm Adeseshiah, and the theatre personality, Habib Tanvir.

NEP accorded a very high priority to the programme of universalisation of elementary education to ensure essential minimum education to all children upto the age of 14 years. A phased drive called *Operation Blackboard* to improve the basic infrastructure of primary schools has been launched. Till 1989-90 a total of Rs. 383.09 crore had been spent under the scheme.

In pursuance of the programme of action for the implementation of the new policy, the Government has launched a phased timebound programme to cover approximately 40 million illiterates by 1990.

A significant event in 1988 was the setting up of a *National Literacy Authority* to manage the national literacy mission aimed at achieving 80% literacy in the 15-35 age group in the country by 1995. (The present national literacy rate is 36.2%).

Although it has not been possible to attain the goal of universal enrolment, the progress achieved in increasing the enrolment has been remarkable. The total enrolment of children in class I-VIII increased from 22.28 million in 1950-51 to 126.36 million in 1987-88, thus registering a more than fivefold increase.

Of the total outlay of Rs. 63,827 million for education in the Seventh Plan (1985-90), the amount earmarked for elementary education was 28.6 per cent—Rs. 18,305 million.

Education in all schools upto class 8 is now free in all States and Union Territories except for boys in classes 7-8 in Uttar Pradesh.

Legislation for compulsory education, as per constitutional directive, exists in 16 States and 3 Union Territories.

The National Education Policy provides for opening of residential schools for talented children. These schools are named *Navodaya Vidyalayas.* It is proposed to open such schools in each district in the country. Of these 261 covering 22 States and 7 Union Territories have been set up by 1989-90.

The Navodaya Vidyalayas are aimed at providing opportunities to the talented children to develop their full potentials and to promote national integration. Education in these schools is free for all students.

Number of students by Education Stage

Number in classes 1987-88	
I-V	92,943,556
VI-VIII	29,914,499
IX-XI/XII	17,859,047
Degree & above	3,463,989

National Council of Educational Research & Training (NCERT), established on September 1, 1961, is registered under the Societies Registration Act (1860). The main objectives of the NCERT are to assist and advise the Ministry of Education and Culture in implementing policies and major programmes in the field of education, particularly school education.

Among the multifarious activities the Council has taken up is revision of secondary level syllabi and textbooks under a collaborative arrangement with the Central Board of Secondary Education.

Most of the States have already completed evaluation of textbooks from the standpoint of national integration and have also revised the textbooks. Efforts are being made to expedite the work in a few States where the progress has been slow.

The Council organizes, every five years, national surveys of teacher education both at secondary and elementary levels. Work has been initiated on the Third National Survey of Elementary Teacher Education and Fourth National Survey of Teacher Education at the secondary level.

The Regional College of Education under NCERT, Ajmer, Bhubaneswar, Bhopal and Mysore continued to organize various pre-service and in-service courses. The summer school-cum-correspondence courses that have been introduced to clear the backlog of untrained graduate teachers also continued to be organized.

The Board of High School and Intermediate Education, Rajputana including Ajmer, Mewar, Central India and Gwalior was established in 1929 by a Resolution of the Government of India. In 1952, the Board was given its present name **The Central Board of Secondary Education.**

The schools affiliated to the Board are located in all parts of the country and even abroad, giving the Board a place of pride in the field of school education. The schools affiliated to CBSE are expected to provide uniform school education cutting across State borders and linguistic areas. The underlying idea is to promote national integration through interstate mobility of students. This arrangement also helps children of transferable persons to pursue uninterrupted studies.

An **Open School** was set up by the CBSE in 1979 for propagation of Distance Education in the country. It imparts secondary stage education through the use of distance teaching techniques which include education through print material, personal contact programmes and other supportive services. The Open School has been conducting examination for its students since 1982-83 leading to Secondary School Certificate of CBSE.

With the idea of encouraging secondary schools having common syllabi and media of instruction for

Educational Institutions 1987-88

S. No. State/U.T.	Primary	Middle	Sec/ Hr. Sec	Colleges for		Universities*
				General Education	Prof. education	
1. Andhra Pradesh	46,086	5,724	5,877	361	85	16
2. Arunachal Pradesh	1,036	219	93	3	0	1
3. Assam	26,670	5,181	2,751	160	15	3
4. Bihar	51,391	12,164	3,743	405	31	11
5. Goa	994	119	332	11	4	1
6. Gujarat	12,950	16,000	4,746	218	55	10
7. Haryana	5,048	1,222	2,094	114	21	3
8. Himachal Pradesh	7,009	1,075	930	37	4	3
9. Jammu & Kashmir	8,610	2,282	1,078	27	9	4
10. Karnataka	24,143	14,790	5,057	372	128	9
11. Kerala	6,817	2,885	2,488	142	31	7
12. Madhya Pradesh	65,275	13,279	3,754	375	36	12
13. Maharashtra	38,300	17,500	8,650	548	171	15
14. Manipur	2,777	436	384	23	4	1
15. Meghalaya	4,158	670	292	23	1	1
16. Mizoram	1,033	477	162	12	1	0
17. Nagaland	1,270	343	115	16	2	0
18. Orissa	39,640	9.269	4,218	182	40	5
19. Punjab	12,322	1,395	2,729	170	26	5
20. Rajasthan	28,507	8,355	3,068	138	41	9
21. Sikkim	489	123	68	1	0	0
22. Tamil Nadu	29,319	5,749	4,529	203	72	13
23. Tripura	1,927	418	381	11	2	1
24. Uttar Pradesh	74,480	16,582	5,737	403	24	25
25. West Bengal	50,827	4,147	6,801	302	62	10
26. A & N Islands	184	42	55	1	1	0
27. Chandigarh	41	33	64	12	2	1
28. Dadra & Nagar Haveli	122	39	8	–	0	0
29. Daman & Diu	39	17	18	1	0	0
30. Delhi	1,840	372	984	52	6	9
31. Lakshadweep	19	4	11	–	0	0
32. Pondicherry	354	103	88	6	2	1
India	543,677	141,014	71,305	4329	876	176

* Includes Deemed Universities and Institutions of National Importance.

providing the facility of uniform education throughout the country for the children of transferable Central Government employees, including defence personnel, the scheme of **Central Schools** or **Kendriya Vidyalayas** was approved by the Government of India in November, 1962. To start with, 20 Regimental Schools were taken over as Central Schools or Kendriya Vidyalayas during the academic year 1963-64. Subsequently, **Kendriya Vidyalaya Sangathan** was set up as an autonomous organization to establish and run the Kendriya Vidyalayas.

There are 744 Kendriya Vidyalayas in the country now catering to 550,000 students. The number of teachers as on 30-4-1989 was 34,127.

Education upto class 8 is free in Kendriya Vidyalayas. The amount of tuition fee for higher classes is linked to the pay of the parents in case they are employed in Central Government or Central Public Sector Undertakings/Autonomous Bodies. In other cases, tuition fee at a flat rate is charged.

Higher Education: At the beginning of 1989-90, the total student enrolment in universities and colleges was 39.48 lakh. This was 1.34 lakh more than the enrolment in the previous year.

Coordination and determination of standards in higher education is a subject in the Union list and is a special responsibility of the Central Government. This responsibility is discharged mainly through the **University Grants Commission** which was established in 1953 under an Act of Parliament.

Eleven Universities, commonly known as *Central Universities*, are at present functioning under Acts of Parliament. Besides, the Central Government have established agencies for promotion and coordination of research efforts in specialized fields. There are four such national agencies at present, namely *the Indian Council of Social Science Research, the Indian Council of Historical Research, the Indian Council of Philosophical Research* and *the Indian Institute of Advanced Studies.*

The eleven Central Universities are Aligarh Muslim University, Aligarh; University of Delhi, Delhi; University of Hyderabad, Hyderabad; Jawaharlal Nehru University, New Delhi; Indira Gandhi Open University, New Delhi; North-Eastern Hill University, Shillong; Viswabharati, Santiniketan; Benaras Hindu University, Varanasi; Pondichery University; Assam Central University and Nagaland Central University. Regarding the last two, notifications enforcing the Acts of formation are yet to be issued.

The first Central Agricultural University is being set up at Imphal, Manipur.

The five **Indian Institutes of Technology** at Kharagpur, Bombay, Madras, Kanpur and Delhi were established as premier centres of education and training in engineering and applied sciences and to provide adequate facilities for post-graduate studies and research.

The Institutes conduct under-graduate programmes as well as Masters courses and Ph.D. programmes different branches of Engineering, Science, Humanities and Social Sciences. There are also advanced centres of training and research in each institute in identified areas of specialization.

The Government of India has established four *Indian Institutes of Management* at Ahmedabad, Bangalore, Calcutta and Lucknow.

Fourteen **Regional Engineering Colleges** were set up one each in the major states during the Second and Third Plan periods to enable the country to meet the increased need for trained personnel during subsequent plan periods. The fifteenth college at Silchar (Assam) was opened in 1977 and the sixteenth at Hamirpur in Himachal Pradesh in 1986.

Today the country has about 180 technical institutions at the first degree level and more than 425 polytechnics at the diploma level with annual admission capacities of 34,000 and 65,000 respectively. More than 80 institutions offer postgraduate and research courses with an annual intake capacity of 7000 students. The Department of Electronics in 1988 announced steps to establish four Indian Institutes of Information Technology (IIIT) at Pune, Bhubaneswar, Hyderabad and Delhi.

School of Planning and Architecture, New Delhi was established in July, 1955 as the School of Town and Country Planning to provide facilities for training in Rural, Urban and Regional Planning and to cater to the needs of Central, State and Local Departments of Town Planning. It is a 'Deemed' University now.

Universities 190: With the setting up of the Chitrakoot Gramodaya Vishwavidyalaya in Chitrakoot, Madhya Pradesh, the total number of Universities and Deemed Universities has risen to 190.

The Acts setting up the central universities of Assam and Nagaland have not yet been enforced by notification.

(For list of universities, please refer to States).

Scientific Personnel: India is said to have the third largest number of scientific personnel in the world.

The world of Indian science is dominated by three academies. *1. Indian National Science Academy, Delhi. 2. Indian Academy of Science, Bangalore* and *3 National Academy of Sciences India, Allahabad.*

The responsibility for research in India is shared among various councils, committees and departments, all of them functioning under the aegis of the Central or State governments. Important among them are: the Council of Scientific and Industrial Research (CSIR), the Indian Council of Medical Research (ICMR), the Indian Council of Agricultural Research (ICAR), the Central Council for Research in Indian Medicine and Homoeopathy, the National Committee on Environmental Planning and Coordination (NCEPC), the Department of Atomic Energy (DAE) and the Department of Space (DOS).

Monument Of Literacy

A young woman in rustic beauty stands over the world of Malayalam alphabet at Pothanicad Panchayat in Ernakulam District.

Literacy drive has caught up in India in a big way. Close on the heels of Kerala's total literacy achievement is that of Burdwan district of West Bengal. Over 90 per cent of the 12-lakh illiterates in the 9-50 age group have been made literate in a massive programme laucnhed in September 1990.

Burdwan is the first district, outside Kerala and the first of the 49 districts running total literacy campaigns to have achieved its target. There has been almost a 40 per cent jump in literacy in the district from 42 to 91 per cent. The district was difficult to cover because learners had to be taught in the language of their choice – Hindi, Urdu, Bengali and Oriya.

Muslims learning Bengali showed be best results. The scheduled castes did better than the scheduled tribes. The tribals knew Hindi and Bengali but had difficulty in expressing in writing in these languages. The adult learners also did better than the children who were in the non-formal education centres.

The Kerala literacy programme, Akshara Keralam, which inspired 45 districts of the country to take to learning on a massive scale has been restructured suitably to take up new cchallenges.

While the Ernakulam district literacy movement was pioneered by the Kerala Sahitya Saksharta Parishad and the dynamic district collector, Mr. K.R. Rajan, a special high powered panel encompassing all sections of society, Kerala Saksharta Samiti, was formed for the state-wide programme.

The chief minister was chairman of the general council of the KSS which had nine cabinet ministers and four secretaries to the government. Vice-chancellors, various social service organisations and NGOs were inducted, giving representation to every shade of opinion. The 14-member executive committee was headed by the minister for rural development.

On April 18 when Kerala was declared fully literate (95 per cent literacy) there were 1,25,000 neo-literates, 500,000 semi-literate and 600,000 illiterate.

Another well-conceived programme for the neo-literates that may not take off now is the "Vigyan Vaadis".

The "total literacy declaration" of Kerala was made at a colourful ceremony in Kozhikode.

The declaration marked the culmination of an year-long campaign begun jointly by the State Government and a host of voluntary agencies to help take nearly 28.5 lakh people in Kerala over the threshold of literacy. In tune with the spirit the total literacy declaration was made by a neo-literate woman from Malappuram district in the presence of eminent men of letters.

The campaign began on February 4, 1990, when the then Prime Minister, Mr. V.P. Singh, handed over the then Chief Minister, Mr. E.K. Nayanar, the "Aksharajyothi' at a function held in Ernakulam, the first fully literate district in the country.

The project, named 'Aksharakeralam' was carried out under the leadership of the Kerala Saksharatha Samiti formed by the Kerala Government. The campaign began with a one-day survey onApril 8 to identify the illiterates in the State. The survey revealed that the State had 28.5 lakh illiterates.

Incidentally, Kerala has recorded the lowest drop-out rate of students in schools among all the States in the country. According to an official estimate, the drop-out rate from Class I to VIII in the State is only 18.71 as against the national average of 64.90. The drop-out rate from Class I to V in Kerala is 0.41 compared to 48.60 in the country.

DEFENCE: NEW DESTROYER

India's first indigenously designed destroyer class vessel – described as a hybrid between Godavari and Kashin Class – built at the state-owned Mazagon Docks in Bombay was formally launched on February 1, 1991. The 6500–7000 ton vessel, christened "INS Delhi', after the first Indian cruiser decommissioned in 1978, this vessel displace twice as much as Godavri class frigates. Filled with modern surface-to-surface, surface-to-air and anti-submarine weapon systems, it will be ready for duty from 1994 after extended fitments and trials.

INS Dega, Indian Navy's newest independent Naval Air Station, was commissioned in Visakhapatnam on October 21, 1991. The airfield which served as an outpost during World War II and takes its name after a bird of the hawk family, was taken over by the Navy from the Civil Aviation in March 1986.Since team facilities such as a modern ATC,Air Technical complex and workshops for second line servicing of aircrafts and components have been added.

India's advanced medium range surface-to-air 'Akash' missile was successfully test-fired at the Interim Test Range at Chandipur in Orissa in 1990. With a range of nearly 25 km the missile has multiple target handling capacity.

India's first indigenous third generation anti-tank missile 'Nag' was test-fired on November 29, 1990. 'Akash and Nag' belong to a family of five missiles, developed by the Defence Research and Development Organisation (DRDO). The other three are 'Agni, Prithvi and Trishul'

In 1989 India became the 6th nation in the world capable of making intermediate range ballistic missiles (IRBM). Her 19-metre long and 14-tonne two-stage missile 'Agni' lifted off successfully from the Interim Test Range at Chandipur on May 22, 1989. It splashed down 1000 km away in the Bay of Bengal. The range of the missile would be 1,500 km with a heavy pay load and 2,500 km with a moderate pay load.

The third test launching of India's surface-to-surface missile 'Prithvi' from Sriharikota in Andhra Pradesh on July 4, 1991 was also successful. The 250 km range-missile was first test launched on February 29, 1988.

In a major boost of India's air defence capabilities, the country's first Airborne Early Warning (AEW) aircraft made its maiden flight at Bangalore on November 9, 1990.

The development of this aircraft at the Aircraft Safety and Test Establishment (ASTE), Bangalore, assumes significance in view of Pakistan's decision to acquire the P3E Orion airborne warning aircraft equipped with Harpoon missiles. For quite sometime Pakistan has been trying to acquire the AWACS (Airborne Warning and Control System) aircraft—a Boeing 707—from the US.

India also launched her first indigenously-built missile boat - INS Vibhuti - on April 26, 1990 at the Mazagon Docks, Bombay.

'INS Savitri' the first warship built by the government-owned Hindustan Shipyard Ltd. was delivered to the navy in 1990. The 111-metre long vessel of 1900 tonnes has been designed for a crew of 150.

Project Skylard - the Rs. 130 crore VLF (very low frequency) communication facility capable of communicating with submerged submarines was commissioned on October 20, 1990 at South Vijayanarayanam in Tirunelveli district of Tamil Nadu. India is the fifth maritime power to have the technology of VLF systems. The others are the US, UK, USSR and France.

India also launched her first indigenously built submarine, INS Shalki in September 1989.

INS Chakra, the Charlie II Class nuclear propelled submarine leased to India by the Soviet Union has been decommissioned and returned last year.

In December 1987, India became the second country in the world operating the *MiG 29* rechristened 'Baaz' by the Indian Air Force. With the addition of MiG 29s, India has all the five MIG supersonics in the Air Force-21, 23, 25, 27 and 29.In addition to the 50 MiG 29s, India has the option to manufacture 150 more of them at the Nasik factory of the Hindustan Aeronautics Ltd.

The Organisation: The authority of the Supreme Commander of the Armed Forces is vested in the President of India. Responsibility for national defence, however, rests with the cabinet. All important issues having a bearing on defence are decided by the Cabinet Committee on Political Affairs which is presided over by the Prime Minister. The Defence Minister is responsible to the Parliament for all matters concerning the Defence Services.

The Ministry of Defence is headed by the Minister of Defence who is of Cabinet rank. He is assisted either by Ministers of State for Defence or Deputy Defence Ministers. The Chief financial authority is the financial adviser to the Ministry of Defence. The Defence Ministry comprises four departments: (i) Department of Defence. (ii) Department of Defence Production. (iii) Department of

Defence Supplies. (iv) Department of Defence Science and Research.

The Ministry is directly responsible for the defence of India and for provisioning and administering the Armed Forces, viz. Army, Navy and Air Force.

The main auxiliaries are: (i) The Territorial Army; (ii) Coast Guards; (iii) Auxiliary Air Force; (iv) National Cadet Corps comprising wings of the Army, Navy and Air Force.

Considering the size of the country, its very long borders and coastline, and also the strategic position it occupies in South Asia and the Indian Ocean, India has to maintain comparatively large defence forces. Today India has the fourth largest Army in the world, the fifth largest air force and the seventh largest navy.

The Armed Forces consists of the three main services, The Army, the Navy and the Air Force, each of which is headed by their respective *Chief of Staff* viz., the Chief of the Army Staff, The Chief of Naval Staff and the Chief of Air Staff who are of the rank of General and equivalent. These three chiefs of staff constitute the chiefs of staff committee, the chairmanship of which rotates among the three service chiefs according to seniority. The Committee is assisted by sub-committees dealing with specific problems such as planning, training, communication etc.

INS Vibhuti—India's first indigenously-built missile boat being launched at the Mazagon Docks in April, 1990.

The Army Headquarters is located in New Delhi. The Chief of the Army Staff is assisted by the following principal staff officers: (i) Vice Chief of Army Staff; (ii) Deputy Chief of Army Staff; (iii) Adjutant General; (iv) Quartermaster General; (v) Master-General of Ordnance; (vi) Military Secretary; (vii) Engineer-in-Chief.

The Army is organized into the following Commands: (i) Western; (ii) Eastern; (iii) Northern; (iv) Southern; (v) Central.

Each command is commanded by a General Officer Commanding in Chief of the rank of Lieutenant General. The Command is further divided into Areas and Independent Sub-areas, commanded by Major General and Brigadier respectively.

The Army consists of a number of arms and services. These are: (i) The President's Body Guard; (ii) Armoured Corps; (iii) Regiment of Artillery; (iv) Corps of Engineers; (v) Corps of Signals; (vi) Military Nursing Service; (vii) Army Medical Corps; (viii) Corps of Electrical and Mechanical Engineers; (ix) Remount & Veterinary Corps; (x) Military Farm Services; (xi) Army Education Corps; (xii) Intelligence Corps; (xiii) Corps of Military Police; (xiv) Army Physical Training Corps; (xv) Pioneer Corps; (xvi) Army Postal Service Corps; (xvii) Defence Security Corps.

The Territorial Army is a voluntary part-time citizen's force consisting of persons who are not professional soldiers but civilians who are eager to play a role in the defence of the country. All Indian nationals between 18 and 35 years of age are eligible to join it. The T.A. comprises infantry, engineering and medical units.

National Cadet Corps. NCC is a youth organization, open to students of academic institutions. It aims at development of leadership qualities, character and spirit of sportsmanship, co-operation and service. It is a voluntary organization and neither officers nor cadets are under any obligation or compulsion to enter active military service.

NCC consists of 3 divisions, Senior, Junior and Girls with Army, Navy and Air Wings. The authorized strength of the senior division is 4 lakhs, Junior Division 7 lakhs and girls 62,000 among the three wings of the Armed Forces.

The Navy: The Headquarters of the Navy is located in New Delhi. The Chief of Naval Staff is assisted by the following principal staff officers:

(i) Vice Chief of Naval Staff; (ii) Chief of Material; (iii) Deputy Chief of Naval Staff; (iv) Chief of Personnel; (v) Controller of Warship Production and Acquisition; (vi) Chief of Logistics.

The Navy has three Naval Commands commanded by Flag Officers Commanding-in-Chief of the rank of Vice Admiral. They are: (i) Western Naval Command at Bombay; (ii) Eastern Naval Command at Vishakhapatnam; (iii) Southern Naval Command at Cochin.

There are two fleets, the Western and the Eastern, commanded by Flag Officers Commanding, of the rank of Vice-Rear Admiral. There are also Flag Officers commanding Goa Area and Andaman & Nicobar Islands. In addition, there are Naval Officers-in-Charge of Bombay, Madras and Calcutta.

The two fleets consist of the aircraft carriers INS Vikrant, and the newly acquired INS Viraat, a number of frigate squadrons comprising modern anti-aircraft, anti-submarine and general purpose ships, missile equipped frigates/destroyers, a squadron of anti-submarine patrol vessels, several mine sweeping squadrons, submarines, a submarine depot ship, a submarine rescue vessel, landing ships capable of carrying tanks and personnel, and several fast attack craft carrying surface-to-surface missiles. In addition there are survey ships, survey craft, fleet tankers and a number of auxiliary craft such as tugs and mooring vessels. The survey units of the Navy carry out surveys of India's coast and surrounding waters, approaches to harbours etc.

A naval organization functions at Port Blair to ensure the security of the Bay Islands.

The Navy took over the responsibility of Maritime Reconnaissance from the IAF and has acquired suitable MR aircraft for the purpose.

The navy has a sizeable Air arm with various types of fixed wing aircraft and helicopters such as Super Constellation, IR-38, Alizes, Sea Harriers, Islanders, Sea Kings, Alsutter and KA-25. These are used in various roles such as Maritime reconnaissance, anti-submarine work, search and rescue, logistic functions such as lifting troops and supplies, air interception, ground support and anti-shipping.

Since 1964, India has developed considerably in building her own ships. At present a number of ships, submarines and smaller craft are under construction for the navy at yards such as Mazagon Docks Ltd. at Bombay, Garden Reach Shipbuilders at Calcutta and Goa Shipyard. The Cochin Shipyard is taking up the construction of the third aircraft carrier.

Six Leander class frigates, INS Nilgiri, Himgiri, Udaygiri. Dunagiri, Taragiri, Vindhyagiri, one ship of indigenous design INS Godavari, two survey ships INS Sandlayak and Nirdeshak, seaward Defence boats, Harbour utility and ocean going tugs, a mooring vessel and patrol craft have been built and commissioned.

The addition of three general purpose, missile carrying destroyers has added considerably to the operational efficiency of the Navy.

The Coast Guard forms a part of the Defence Ministry. Its headquarters is at New Delhi and is headed by a Director General. It has three regional headquarters at Bombay (Western region), Madras (Southern region) and Port Blair (Andaman and Nicobar Islands).

The main duties of the Coast Guard are protection of coastal and offshore installations and terminals, protection of fisheries, patrol of the exclusive economic zone to prevent poaching, anti-smuggling work and search and rescue missions.

The coast guard fleet comprises ships such as KUTHAR (ex-navy), VIKRAM, VIJAY, VEERA (indigenously built), a number of offshore patrol vessels and a number of inshore patrol vessels.

The *Air Force* is organized into five operational Commands and two support Commands. These are:

(i) Western Air Command; (ii) Eastern Air Command; (iii) Southern Air Command; (iv) Central Air Command; (v) South-Western Air Command; (vi) Training Command; (vii) Maintenance Command.

The Air Headquarters is located in New Delhi. The Chief of Air Staff is assisted by the following Principal Staff Officers:

(i) Vice Chief of Air Staff; (ii) Deputy Chief of Air Staff; (iii) Air Officer in Charge, Administration; (iv) Air Officer in Charge, Personnel; (v) Air Officer in Charge, Maintenance.

At the time of partition in 1947, India's share of the Air Force was less than 10 full squadrons. Today there are more than 50 squadrons comprising combat, transport, liaison and reconnaissance aircraft/helicopters. There are more than 1000 aircraft and helicopters of which the main types are Canberra, Hunter, Ajeet, Kiran, Chetak, Mig-21, 23, 25, 27 and 29, Sec-7, An-32, Il-76, Mi-8, Jaguar and Mirage-2000. In addition to purchases from abroad, India also designs and makes her own aircraft.

In matters like medical services, public relations, etc. which are common to all three services, they are served by *Inter-Service Organizations* which function directly under the Ministry of Defence. Some such important organizations are:

(1) Armed Forces Film and Photo Division, (2) Armed Forces Medical Services, (3) Defence Lands and Cantonments, (4) Directorate of Public Relations, (5) Historical Section, (6) Joint Cipher Bureau, (7) Ministry of Defence Library, (8) National Defence College, (9) Service Sports Control Board, (10) Videshi Bhasha Vidyalaya.

Some of the noteworthy inter-service training establishments are: (1) Institute of Defence Management, (2) Institute of Armament Technology, (3) Defence Services Staff College, (4) National Defence Academy.

Armed Forces Medical Services: Comprise Army Medical Corps, Army Dental Corps and Military Nursing Service under the overall control of Director General, Armed Forces Medical Services.

Armed Forces Medical College, Pune: Trains civilian candidates for the MBBS course of Pune University. 105 boys and 25 girls are admitted every year. Candidates who receive stipends number 110. In addition 10 seats are reserved for SC and ST candidates. All boys have to serve as Permanent Commissioned officers. Others may serve only 7 years. Postgraduate specialization courses are also provided at Pune. Training in medical problems peculiar to aviators is given at the Institute of Aviation Medicine at Bangalore and those peculiar to Navy such as those special to divers and submariners, at the Institute of Naval Medicine, Bombay.

Cantonments were established under the Cantonments Act, 1924 with the purpose of accommodating Armed Forces personnel and safeguarding their health, welfare and security. Since the cantonments had a significant civilian population, it was found necessary to provide for local self-government of those areas. There are 62 cantonments in India.

The Defence Production activities are broadly divided into two groups viz. departmentally run Ordnance Factories and Defence Public Sector undertakings. Whereas the arms, ammunition, tanks, vehicles, etc. are made in the Ordnance Factories, the Defence public sector undertakings are geared to produce ships, submarines, aircraft, earthmoving equipment, machine tools, missiles, sensors, communication equipment etc. The Ordnance Factories and Defence PSU's have an ongoing programme of indigenisation.

Public Sector Undertakings: There are 8 PSUs under the administrative control of the Ministry of Defence (Department of Defence Production). They are:

(1) Hindustan Aeronautics Ltd. (HAL), (2) Bharat Electronics Ltd. (BEL), (3) Bharat Earth Movers Ltd. (BEML), (4) Mazagon Docks Ltd. (MDL), (5) Garden Reach Shipbuilders and Engineers Ltd. (GRSE), (6) Goa Shipyards Ltd. (7) Bharat Dynamics Ltd. (BDL), (8) Mishra Dhatu Nigam Ltd. (MIDHANI).

Mishra Dhatu Nigam Ltd. manufactures the special alloys and metals required by aeronautics, space and electronics industries.

The eight Defence PSUs have a total work force of 109,000 out of which HAL has the maximum (44,000) and BDL has the least (1600).

Research & Development: The R & D activities are carried out in 45 laboratories/establishments and a few field units located in different parts of the country. The organization is headed by the Director General, Research & Development (DGR & D) who is also the Secretary to the Govt. for Defence Research. He is assisted by three chief controllers.

Commissioned Ranks

Army	*Navy*	*Air Force*
Field Marshal	*Admiral of the Fleet*	*Marshal of the Air Force*
General	*Admiral*	*Air Chief Marshal*
Lieut. General	*Vice Admiral*	*Air Marshal*
Major General	*Rear Admiral*	*Air Vice Marshal*
Brigadier	*Commodore*	*Air Commodore*
Colonel	*Captain*	*Group Captain*
Lieut. Colonel	*Commander*	*Wing Commander*
Major	*Lieut. Commander*	*Squadron Leader*
Captain	*Lieutenant*	*Flight Lieutenant*
Lieutenant	*Sub Lieutenant*	*Flying Officer*
Second Lieutenant	*Acting Sub Lieutenant*	*Pilot Officer*

NEW RAIL ZONES, TRAINS

New Railway Zones and new superfast express trains linking the North and the South were announced in 1991. Of the new ones in addition to the existing nine zones, a South-Western zone with Bangalore as headquarters seemed imminent.

Two Rajdhani superfast express trains – one from Delhi to Thiruvananthapuram via Madras and another from Delhi to Bangalore via Secunderabad, both twice a week – are to be introduced soon. A Shatabdi express, intercity express train between Madras and Bangalore, is another boon to the South.

The Delhi – Madras rail route has now been fully electrified. The work to bridge the final gap between Itarsi and Nagpur was completed in 1991. The electrification of the 2194 km route at a cost of Rs. 700 crores was start-ed in the late Seventees and the first section between Madras and Vijayawada was commissioned in 1980.

Meanwhile the one-year-old Konkan Railway Corporation Ltd. is going ahead with the massive Rs. 1200 crore project to link the states of Maharashtra, Goa, Karnataka and Kerala by a coastal line. The new 760 km line has 71 tunnels, 146 major bridges, 1400 minor bridges and 53 stations. Of this, 115 km route is nearing completion with station buildings, staff quarters and yards between Mangalore and Uduppi in Karnataka and Roha and Dasgaon in Maharastra.

The Konkan Rail route will reduce the travel time from Bombay to Goa to 8 hours, from Bombay to Mangalore to 16 hours and from Bombay to Ratnagiri to 4.5 hours. The scheduled date of completion is October, 1994.

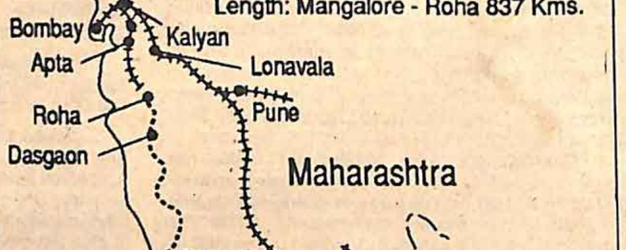
Indian Railway has grown into Asia's largest and the world's fourth largest railway system from a modest beginning in April 1853 when the first train steamed off from Bombay to Thana, a stretch of 34 km. As on March 31, 1989 it had a route kilometrage of 61,985. It is also the biggest public sector undertaking in the country with a capital-at-charge of Rs. 12,987.5 crore and a total investment of Rs. 17,239.4 crore.

Indian railways run about 11,270 trains everyday connecting 7,083 stations. During 1988-89, they carried 350 crore passengers and 30.2 crore tonnes of freight traffic. Indian railways operate on three gauges—broad gauge, metre gauge and narrow gauge. The operation fleet consists of 8,813 locomotives, 37,870 coaching ve-

Railway Progress Chart

	1950-51	1988-89
Route length		
Electrified (km)	388	8880
Non-electrified (km)	53208	61985
Total (km)	53596	70865
Passengers (lakh)	12840	35000
Goods (lakh tonnes)	930	3020

General map of west coast railway line



Length: Mangalore - Roha 837 Kms.

hicles and 345,821 wagons.

Rolling Stock: Locomotives-Steam: 3,826; Diesel: 3,454; Electric: 1,533; Revenue gross receipts: Rs. 9,528.62 crore; Number of employees: 16.24 lakh; Cost of staff: Rs. 4,390.5 crore.

Indian railways entered the Metro Age during 1984-85. A section between Esplanade and Bhavanipur in Calcutta covering a distance of 3.5 km connecting five stations was opened for commercial operation during this period. Another stretch of 2.2 km between Dum Dum and Belgachia was opened later on.

India's fastest train—the *Shatabdi Express* between New Delhi and Jhansi was introduced in 1988. The train designed by the Research, Design and Standards Organisation, Lucknow, covers the 410 km distance in four hours and 40 minutes. The entire train, with accommodation for 470, is air-conditioned. Shatabdi Expresses now runs between New Delhi-Bhopal, New Delhi-Lucknow and New Delhi-Chandigarh.

The responsibility for the administration and management of the railways vests in the Railway Board under the overall supervision of a Cabinet Minister assisted by a Minister of State. The Board consists of a Chairman, who is an ex-officio Principal Secretary to the Government in the Ministry of Railways, a Financial Commissioner and four other members, who are all ex-officio Secretaries to Government.

Zonal Divisions

Railway	Headquarters	Route km
Central	Bombay V.T.	6472
Eastern	Calcutta	4270
Northern	New Delhi	10977
North-Eastern	Gorakhpur	5163
North-East Frontier	Maligaon (Guwahati)	3739
Southern	Madras	6722
South Central	Secunderabad	7137
South Eastern	Calcutta	7075
Western	Bombay-Churchgate	10295

The Railways are divided into nine zones, each headed by a General Manager.

Roads: India has developed a *national highway* system. It has a total length of 33,612 km as on March 31, 1989. An outlay of Rs. 1,019.75 crore was provided in the Seventh Plan for the development of national highways. Though the national highways constitute only two per cent of the total road length, they carry nearly 45 per cent of the road traffic. The government set up a National Highway Authority on June 15, 1989.

State highways and district and rural roads are the responsibility of the state governments. Roads are being developed in rural areas under the minimum needs programme the objective being to link all villages with a population of 1,500 and above and 50 per cent of the villages with a population of 1,000-1,500 by all weather roads.

Total number of motor vehicles in the country stood at 1.1 crore in June 1989.

Motor Vehicles Act 1988 was brought into force with effect from July 1, 1989. Under this 16-year olds are permitted to drive gearless two-wheelers. The system of licensing and registration of vehicles has been revised.

The *Border Roads Development Board* was set up in March 1960 for accelerating economic development and strengthening defence preparedness through rapid road communication. *Border Road Organization* (BRO) executes its works departmentally. So far BRO has constructed/upgraded about 19,000 km of roads and are maintaining about 18,000 km of roads.

Waterways: India has the largest merchant shipping fleet among the developing countries, and ranks 16th in the world in shipping tonnage. As compared to 1.92 lakh GRT (Gross Registered Tonnage) at the time of independence, the country's operative tonnage as on 31-12-1989 is 5.9 million GRT. As on December 31, 1989 the Indian fleet comprised 402 ships.

There are 55 shipping companies in the country of which 19 are engaged exclusively in coastal trade, 29 in overseas trade and the remaining in both coastal and overseas trade. The only government shipping company viz. *Shipping Corporation of India* carries on both.

The SCI which is one of the biggest shipping lines in the world, has a merchant fleet of 127 vessels of 29.09 lakh GRT as on December 31, 1989. The tonnage of SCI accounts for about 56 per cent of the total Indian tonnage.

Its Rs. 600–crores proposal to acquire six product carriers and three oil tankers was cleared by the government in October 1991. During the 8th plan it proposes to acquire 100 vessels of different types.

The 14-year long recession on global shipping affected Indian companies too. Several ones, including Dempo Steam Shipping and Seven Seas Transporting went out of business. Scindia Steam Navigation Company Ltd. (4.03 lakh GRT), India Steamship Company Ltd. (1.01 lakh GRT) and Ratnakar Shipping Company Ltd. (1.33 lakh GRT) were affected.

Others on the scene are Great Eastern Shipping Company Ltd. (4.50 lakh GRT), South India Shipping Corporation Ltd. (2.74 lakh GRT), Chowgule Steamship Ltd. (2.27 lakh GRT) and Damodar Bulk Carriers Ltd. (1.13 lakh GRT).

Indian Register of Shipping (IRS) has its head office in Bombay and out-post offices at Bombay, Calcutta, Visakhapatnam, Madras, Cochin, Goa, Rourkela and Tiruchirapally.

There are four major and four medium size

India's Selected Long Distance Trains

(with new numbers introduced in 1989)

Number and Name		*Stations From—To*	*Distance (km)*
6017/6018	Himsagar Express	Kanyakumari–Jammu Tawi (Weekly)	3726
2601/2602	Express	Guwahati–Trivandrum (Weekly)	3574
2649/2650	Express	Cochin–Guwahati (Weekly)	3362
2625/2626	Kerala Express	New Delhi–Trivandrum	3054
2673/2674	Express	Bangalore–Guwahati (Weekly)	3016
5011/5012	Express	Gorakhpur–Cochin (Bi-weekly)	2998
2603/2604	Express	Rajkot–Trivandrum (Weekly)	2734
5645/5646	Express	Dadar–Guwahati (Weekly)	2510
2627/2628	Karnataka Express	New Delhi–Bangalore	2444
6043/6044	Express	Madras–Patna (Weekly)	2305
2615/2616	G.T. Express	New Delhi–Madras	2190
2621/2622	Tamil Nadu Express	New Delhi–Madras	2190
2701/2702	Goa Express	Hazrat Nizamuddin (Delhi)—Vasco-da-Gama	2166
1081/1082	Express	Bombay V.T.–Kanyakumari	2150
7491/7492	Express	Tirupati–Varanasi (Triweekly)	2100
6093/6094	Express	Madras–Lucknow (Biweekly)	2071
2997/2998	Express	Jammu Tawi–Hapa (Weekly)	1990
2971/2972	Express	Jammu Tawi–Bombay Central (4 days a week)	1970
2859/2860	Gitanjali Express	Howrah–Bombay V.T.	1968
2373/2374	Himgiri Express	Howrah–Jammu Tawi (Triweekly)	1967
2521/2522	North East Express	New Delhi–Guwahati	1926
2903/2904	Frontier Mail	Bombay Central–Amritsar	1900
2135/2136	Netravati Express	Bombay V.T.–Cochin (Biweekly)	1852
2925/2926	Paschim Express	Bombay Central–Amritsar	1831
5089/5090	Express	Gorakhpur–Hyderabad (Biweekly)	1830
2815/2816	Express	New Delhi–Puri (4 days a week)	1787
2311/2312	Kalka Mail	Howrah–Kalka	1709
2981/2982	Sarvodaya Express	Jammu Tawi–Ahmedabad (Biweekly)	1682
2723/2724	Andhra Pradesh Express	New Delhi–Secunderabad	1666
2841/2842	Coromandal Express	Howrah–Madras	1663
8079/8080	Express	Tirupati–Howrah	1679
2165/2166	Ratnagiri Express	Bombay VT–Varanasi (Triweekly)	1509
2301/2302	Rajdhani Express	New Delhi–Howrah (5 days a week)	1441
2133/2134	Pushpak Express	Bombay VT–Lucknow	1414
2951/2952	Rajdhani Express	New Delhi–Bombay Central (6 days a week)	1384
6511/6512	Express	Dadar–Madras	1270
2587/2588	Express	Jammu Tawi–Gorakhpur (Triweekly)	1270
2731/2732	Express	Ahmedabad–Secunderabad (Biweekly)	1228
2119/2120	Konarak Express	Bhubaneshwar–Secunderabad	1144
2391/2392	Magadh Express	New Delhi–Patna	992
2557/2558	Kanchenjunga Express	Howrah–Guwahati	991
4067/4068	Malwa Express	New Delhi–Indore	969
2101/2102	Minar Express	Bombay VT–Secunderabad	800
2001/2002	Shatabdi Express	New Delhi–Bhopal	705
2417/2418	Prayagraj Express	New Delhi–Allahabad	627
2419/2420	Gomti Express	New Delhi–Lucknow	507
2003/2004	Shatabdi Express	New Delhi–Lucknow	507
2497/2498	Shane-e-Punjab Express	Amritsar–New Delhi	447
2639/2640	Brindavan Express	Madras–Bangalore	362
2079/2080	Taj Express	New Delhi–Gwalior (6 days a week)	317
4095/4096	Himalayan Queen	New Delhi–Kalka	268
9021/9022	Flying Ranee Express	Bombay Central–Surat	263

2005/2006	*Shatabdi Express*	*New Delhi–Chandigarh (6 days a week)*	*244*
1007/1008	*Deccan Express*	*Bombay VT–Pune*	*191*
2123/2124	*Deccan Queen*	*Bombay VT–Pune*	*191*
Metre Gauge Trains			
5313/5314	*Marudhar Express*	*Lucknow–Jodhpur*	*990*
2905/2906	*Ashram Express*	*Delhi–Ahmedabad*	*934*
9615/9616	*Chetak Express*	*Delhi–Udaipur*	*739*
6103/6104	*Pearl City Express*	*Madras–Egmore–Tuticorin*	*655*
2461/2462	*Mandar Express*	*Jodhpur–Delhi*	*621*
5903/5904	*Assam Mail*	*Guwahati–Tinsukia*	*514*
2635/2636	*Vaiga Express*	*Madras Egmore–Madurai*	*492*
2907/2908	*Surya Nagri Express*	*Ahmedabad–Jodhpur*	*455*
5811/5812	*Barak Valley Express*	*Guwahati–Silchar*	*397*
2901/2902	*Pink City Express*	*Delhi–Jaipur*	*308*

shipyards in India. There are another 32 small shipyards in the private sector which caters to domestic requirements for small crafts.

Of the major ones Hindustan Shipyard Ltd., Visakhapatnam and Cochin Shipyard Ltd. are under the control of the Ministry of Surface Transport. The other ones namely, Mazagon Dock Ltd., Bombay and Garden Reach Shipbuilders & Engineers, Calcutta are under the Department of Defence Production, Ministry of Defence.

The Hindustan Shipyard, Visakhapatnam, established in mid-forties originally by Scindia Steam Navigation Company and taken over by the Central Government in 1961, has built 91 ships since 1947. *The Cochin Shipyard,* set up with Japanese collaboration, is designed to have a dock for building ships upto 85,000 Dwt and a repair dock to accommodate ships upto 100,000 Dwt. The seventh ship built there is 'Motilal Nehru', the first-ever oil tanker made in India. It has a capacity of 86,000 Dwt.

Inland Waterways: India has about 1,400 km navigable water ways, but it is heavily underutilised.

Important among the navigable rivers are the Ganga, the Brahmaputra and their tributaries; the Godavari, the Krishna, the Mahanadi, the Narmada, the Tapti and their canals; the backwaters and canals of Kerala; the Buckingham canal in Andhra Pradesh and Tamil Nadu, the Cumbarjua canal and the Mandovi and the Zuari rivers in Goa and the network of tidal rivers in the Sunderbans.

The Inland Waterways Authority of India was established in 1985 for the development of a na-

Rs. Two lakh for Rail victims

- *The Ministry of Railways enforced from July 1 1990, the new Railway Act, replacing the 1890 Act. The following are the salient features:*
- *The minimum excess charge for travelling without or with improper ticket will be Rs. 50 against Rs. 10 earlier. There is no provision for lower penalty in case the passenger informs the railway staff about it before it is detected.*
- *Misusing alarm chains can entail imprisonment for a year or a fine of Rs. 1,000 or both. There is also a provision for a fine of Rs. 500 for the first offence.*
- *The liability of the railways for death and injuries in an accident has been enhanced, with the next of kin of a dead passenger being entitled to a maximum compensation of Rs. 2 lakh against Rs. 1 lakh now.*
- *The compensation payable for 'scheduled injuries' will range from Rs. 16,000 to Rs. 2 lakh. For the purpose of compensation the term "dependent" has also been redefined.*
- *An employee affected by an accident while on duty will be given the same compensation as a passenger.*
- *A person can be imprisoned for three years or sentenced to pay a fine of Rs. 1,000 or both for carrying "dangerous goods" on the railways.*
- *The maximum fine for transferring a reserved ticket is imprisonment for three months or a fine of Rs. 500 or both.*
- *Those unauthorisedly selling railway tickets can be imprisoned for three years or fined up to Rs. 10,000 or both.*
- *The Act bans canvassing or hawking or begging on trains and offenders can be imprisoned up to one year or fined up to Rs. 2,000 or both.*
- *The act empowers the staff to arrest offenders of 26 specific offences without warrant. It also empowers the railways to prohibit smoking "in any train or part of a train."*

tional inland waterways system.

The pilot project for establishing navigation through 6000 km of the Ganga between Allahabad and Patna at a cost of Rs. 19 crore is in progress.

There are 11 major ports in India. In addition 139 minor working ports (out of a total of 226 minor ones) are also scattered along the coastline of about 6,000 km. Major ports: West Coast—Kandla, Bombay, Mormugao, New Mangalore and Cochin. (A new major port at Nhava Sheva off Bombay is fast developing). East coast—Tuticorin, Madras, Vishakhapatnam, Pardip and Calcutta-Haldia.

Civil Aviation: As on 31 Dec. 1989, there are 815 civil aircraft including gliders in the country with current certificate of registration, out of which 450 aircraft including gliders have current certificate of airworthiness.

During 1989, a total of 12,281,918 passengers and 216,098 tonnes of freight were carried on scheduled services (both international and domestic) of Air India and Indian Airlines.

Air India, the country's flag carrier made a record profit of Rs. 77 crore during 1989-90 over a turnover of Rs. 1,700 crore.

Air India in 1990 created aviation history by evacuating 107,822 Indian refugees from Kuwait by a total of 419 flights over a period of two months. It has ten Boeing 747-200 aircraft, three Airbus A300-B4's, six airbus A310-300's and two Boeing 747-300 Combi aircraft in its fleet. Air India launched a new corporate image in 1989.

Indian Airlines incurred a loss of Rs. 20 crore in 1989-90 against a profit of Rs. 36 crore in 1988-89. It is heading for a staggering loss in 1990-91 mainly on account of the withdrawal of Airbus A320s following a crash.

At the beginning of 1990-91, IA fleet comprised 11 Airbus A300 (including one on lease), 30 Boeing-737 (including 6 on lease), 12 A320, 3 HS-748, 4 F27 (including 2 leased to Coast Guard) and one TU-154 (on lease). It lost one Boeing-737 by accident but got 5 new ones in 1988.

Vayudoot operated from 105 stations all over the country. Though it earned a profit of Rs. 6 lakh in 1986-87 it incurred an estimated loss of 84.6 crore in 1988-89.

International Airport Authority of India manages the four major airports in the country in Bombay, Delhi, Calcutta and Madras while the *National Airports Authority* manages 88 domestic aerodromes and 28 civil enclaves at Defence aerodromes. Trivandrum was declared an international airport in 1990.

Calicut and Agati were put on the air-map in 1988.

SUCCESS OF REMOTE SENSING

India's second remote sensing satellite, the IRS-1B was successfully launched on Agust 29, 1991. The Vostock launcher; carrying the indigenous 990 kg satellite, lifted off from the Baiknour Cosmodrome in the Soviet Union.

The satellite is circling the earth in a polar sunsynchronous orbit from an altitude of 904 km, mapping the entire country once every 22 days. Its planned life time is three years, but it is expected to last beyond that.

Prof. U.R. Rao, Chairman of the Indian Space Research Organisation (ISRO) said that the IRS-1B could acquire imageries of everything from Viëtnam to Oman. Impressed by the quality of the pictures, the Americans, who sell pictures of their Landsate for a heavy price, had offered to market IRS-IB imageries.

At a conference in Hyderabad of the heads of space agencies of the Asia Pacific region, the IRS-1B pictures displayed there had been sold like "hot cakes". Over $10,000 worth of pictures were sold in a matter of hours, he added.

Prof. Rao said the success of the IRS-1B had brought in a flood of inquiries from other countries about supply of imageries and sub-systems of remote sensing satellites. The relatively low cost of IRS-1B pictures over that of the Spot and Landsate should give India a competitive edge.

INSAT-II A: Prof.Rao said the first indigenously built multi-purpose communication satellite, INSAT-II A, will be launched aboard a French Ariane rocket before March 1992. The launch would mark India's transition from the use of foreign-acquired communiction satellites to indigenously built ones.

The spacecraft was completely assembled and was undergoing space chamber tests, which should be over in a few months.

The INSAT-II A would demonstrate that India was fully geared to build both communication as well as remote sensing satellites.

The next flight of the Augmented Satellite Launch Vehicle (ASLV) would take place from the Sriharikota launch pad early 1992.

The first two launches of the ASLV D1 and D2 ended in failure and the ISRO had analysed the causes and incorporated certain safety features while building the ASLV-D3.

The Polar Satellite Launch Vehicle (PSLV) project for putting into orbit the IRS class of satellites was undergoing stage by stage tests and its first experimental flight was expected to take place by the end of 1992.

INSAT-1D: With the successful commissioning of INSAT-1D in 1990 the Indian National Satellite System has come out of the woods. The $ 80 million (Rs. 144 crore) satellite was launched from Cape Canaveral on a Delta rocket on June 12 and reached its geostationary orbit 36,000 km away in 10 days. It became operational on July 17.

INSAT-1D is the fourth and last satellite of the INSAT system which was jeopardized by the failure of two of its three predecessors. The three-in-one satellite took over the mantle of providing telecommunications, radio and television networking and round the clock weather monitoring from its only other surviving and ageing cousin INSAT-1B and also from INTELSAT and ARABSAT which were hired temporarily.

The successful operation of INSAT-1D was vital in the light of the total failure of two of the earlier satellites. INSAT-1A launched in 1982 and INSAT-1C launched in 1989 met with premature deaths. In between, INSAT-1B proved to be a work-horse ever since its launch from Kennedy Space Centre, Florida in August 1983.

The four satellites of the INSAT-1 series were made by the Ford Aerospace and Communication Corporation of the US. This series will be replaced by the indigenously developed second generation INSAT-II spacecrafts during the 1990s. The first two test satellites are to be launched by the Ariane rocket of the European Space Agency in October 1991.

The Indian Space programme began with the setting up of a sounding rocket launching facility at Thumba, a fishing hamlet near Thiruvananthapuram in 1963, The Thumba Equatorial Rocket Launching Station (TERLS), which in 1968 was dedicated to the United Nations Organization, served as the nucleus for the growth of Indian Space Research Organization (ISRO), which today encompasses the following Centres.

(1) Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram; (2) SHAR Centre, Sriharikota; (3) ISRO Satellite Centre (ISAC), Bangalore; (4) Auxiliary Propulsion System Unit (APSU), Bangalore; (5) Space Applications Centre (SAC), Ahmedabad; (6) Development & Educational Communication Unit (DECU), Ahmedabad; and (7) ISRO Telemetry, Tracking & Command Network (ISTRAC) with its headquarters at Bangalore.

The Development of Space (DOS) located at Bangalore is responsible for the execution of India's Space activities through ISRO. The Physical Research Laboratory (PRL) at Ahmedabad, an institution supported mainly by DOS, conducts research in space and related sciences. The DOS-supported National Remote Sensing Agency (NRSA) at Hyderabad, is engaged in using remote sensing techniques for the survey and management of natural resources.

INSAT-1D satellite lifts off atop Delta rocket from Cape Canaveral, Florida on June 12, 1990

The Indian Space Programme took a major forward step with the launching of the first indigenously built spacecraft, *Aryabhatta,* in 1975. This 360-kg satellite, designed to acquire the basic expertise in satellite technology, was placed into orbit from the Soviet Union by a Soviet rocket carrier.

Aryabhatta was followed by *Bhaskara-1,* an experimental earth observation satellite. Launched in 1979, Bhaskara–1 carried TV camera and microwave radiometer payloads for Earth observation studies in hydrology, forestry, snow melting and oceanography. An improved version of this satellite, *Bhaskara-II,* was launched in 1981. The Bhaskara satellites also were launched by Soviet rocket carriers.

In the area of satellite communication, ISRO conducted two large scale experiments relevant to India's communication needs. They were: (a) Satel-

Landmarks in Space Programme

Date	Satellite	Function	Launcher	Result
March 19, 1975	Aryabhatta	Scientific	USSR	Successful
June 7, 1979	Bhaskara-I	Earth observation	USSR	Successful
Aug. 10, 1979	Rohini	Earth observation	SLV-3	Unsuccessful
July 18, 1980	Rohini	Earth observation	SLV-3	Successful
June 19, 1981	Apple	Communication	Ariane ESA	Successful
Nov. 20, 1981	Bhaskara-II	Earth observation	USSR	Successful
May 31, 1981	Rohini	Scientific	SLV-3	Unsuccessful
April 17, 1983	Rohini	Scientific	SLV-3	Successful
March 24, 1987	SROSS-I	Technology and Application	ASLV	Unsuccessful
March 17, 1988	IRS-1A	Remote Sensing	USSR	Successful
July 13, 1988	SROSS-2	Technology and Application	ASLV-D2	Unsuccessful

lite Instructional Television Experiment Project (SITE) during 1977-79. Under SITE, developmental programmes were telecast direct to community receivers in 2,400 villages, using the American satellite, ATS–6. Similarly, with the aid of the Franco-German 'Symphonie' spacecraft, a series of innovative communication experiments were conducted under STEP.

Parallel to spacecraft technology, India took steps for building its own first satellite launch vehicle, SLV-3. The four-stage, solid propellant SLV-3, during its three successful flights in 1980, 1981 and 1983, orbited Indian-built Rohini series satellites.

In June 1981, India's first experimental geostationary communications satellite, APPLE, was successfully launched aboard the European Space Agency's Ariane launch vehicle from Kourou in French Guyana. During this satellite's active in-orbit life of 27 months, it was used to conduct a variety of advanced satellite communication experiments. It also provided live TV coverage of selected national events.

The SLV-3 project provided India with the expertise for embarking on the development of larger and more sophisticated launch vehicles like the ASLVs—Augmented Satellite Launch Vehicles.

Another important project on hands is the Indian Remote Sensing Satellite (IRS) series. The first such satellite, IRS-IA, went into orbit on March 17, 1988 launched from the Soviet Union. The three-axis stabilised 975-kg IRS carried payload to collect data on agriculture, forestry, hydrology, snow-melting and meteorology.

ISRO had developed and qualified a series of Sounding Rockets like RH-125, RH-200, Centure, RH-300, RH-560, etc., for meteorological and upper atmospheric research. RH-560 is India's largest Sounding Rocket capable of reaching an altitude of 350 km with a 100-kg payload weight. Tests are regularly conducted from India's three sounding rocket ranges at Thumba, Sriharikota and Balasore.

India attaches great importance to co-operation with other countries and international agencies, most prominent among them being the USSR, the USA, The Federal Republic of Germany (FRG), France, the European Space Agency (ESA), the United Kingdom (UK) and the United Nations.

Indo-Soviet collaboration in space began with the USSR extending technical assistance to India in setting up her Thumba Equatorial Rocket Launching Station (TERLS), way back in 1962. TERLS was dedicated to the United Nations in 1968 and has since operated as an international sounding rocket range.

Regular meteorological soundings are being jointly conducted from TERLS by India and the USSR using the Soviet M-100 rockets. The collaboration between the two countries further intensified with the USSR offering free launches for the three Indian satellites, Aryabhatta, Bhaskara-1 and Bhaskara-II.

The USSR also helped India establish her Satellite Tracking & Ranging Station (STARS) and offered the Luna-24 moon rock samples to Indian scientists for investigation. Scientists from the two countries have also conducted joint balloon experiments in gamma-ray astronomy from India's balloon facility at Hyderabad.

The successful completion of the eight-day Indo-Soviet joint manned mission abroad Soyuz-T—11/Salyut-7 in 1984 was a landmark. Sqn Ldr Rakesh Sharma thus became India's first cosmonaut on 3rd April, 1984.

The dedication of TERLS to the UN, the conduct of instructional television experiments via USA's ATS-6 satellite and communication experiments using the Franco-German 'Symphonie' spacecraft, the launching of Aryabhatta and Bhaskara satellites by the Soviet Union and of APPLE and INSAT-1C on board ESA's Ariane, and the orbiting of INSAT-1B by USA's Space Shuttle are important landmarks in India's policy of active collaboration with other countries in harnessing Space for national development.

As part of ISRO's co-operation with industry, many technologies/processes developed by ISRO in the areas of electronics, chemicals and materials have been transferred to Indian industries for commercial production.

FILMS: INDIA TOPS

India produced 948 films in 1990 to remain world's number one. This is the highest figure ever, the earlier highest being 912 in 1985.

Telugu with 204 films reached the top of the ladder followed by Hindi with 200 films. In 1988 and 1989 Hindi topped the list with 182 and 176 films respectively.

In 1990 a large number of films were dubbed into Hindi and Telugu. In Hindi this conversion has reached an all-time high.

During the last 40 years (1951-1990) a total of 19,589 films have been certified for public exhibition in the country.

Of the 948 films in 1990 the Regional Board in Madras certified the largest number–380 films. Other centres: Bombay-199; Hyderabad-115; Bangalore-103; Calcutta-77; Thiruvananthapuram-72; New Delhi-2.

Except for 2 films (1 Bengali and 1 Malayalam) all were in colour.

Of the Hindi films, the musical comedy *Dil* proved to be the largest earner in 1990 while 1989's *'Maine Pyar Kiya'* proved to be the highest grosser of the decade.

Here is the language-wise breakup of films:

Lanugage	1990	1989	1988
Telugu	204	152	162
Hindi	200	176	182
Tamil	194	148	152
Malayalam	126	96	83
Kannada	81	75	67
Bengali	50	50	37
Marathi	25	30	23
Gujarati	14	9	6
Oriya	13	13	16
Assamese	8	4	7
Punjabi	7	2	6
Bhojpuri	5	10	8
Rajasthani	5	7	7
English	4	3	5
Nepali	4	1	2
Manipuri	2	—	—
Haryanvi	2	3	5
Kashmiri	1	—	—
Garhwali	1	—	—
Tulu	1	—	—
Bodo	1	—	—
Others	—	2	5
Total	948	783	773

Eight Decades: Cinema is 78 years old in India. The first Indian to make a film was *Harishchandra Sakharam Bhatwadekar* (known popularly as Save Dada). He made short films like 'The Wrestlers,' 'Man and Monkey' in 1899.

The first fully indigenous silent feature film 'Raja Harishchandra' made by '*Dhundiraj Govind Phalke* (Dada Saheb Phalke) was released on May 3, 1913. It had titles in Hindi and English and it ran for an unprecedented 23 days. 'Raja Harishchandra' (3700 ft.) was cent per cent Indian whereas the earlier made 'Pundalik' was half British in its make. Therefore Dada Saheb Phalke has been rightly acclaimed as the 'F*ather of Indian Cinema.'*

The most remarkable thing about the birth of the sound film in India is that it came with a bang and quickly displaced the silent movies. The first Indian talkie *Alam Ara* produced by the Imperial Film Company and directed by Ardeshir Irani was released on March 14, 1931 at the Majestic Cinema in Bombay.

The year 1931 marked the beginning of the Talkie era in South India also. The first talkie pictures in Telugu and Tamil i.e. 'Bhaktha Prahlad' and 'Kalidoss' were released in the same year.

The thirties is recognized as the decade of social protest in the history of Indian Cinema. A number of films making a strong plea against social injustice were also made in this period like V. Shantaram's 'Duniya na Mane' 'Aami' and 'Padosi,' P.C. Barua's "Devadas" and "Mukti," Debaki Bose's "Vidyapati" and "Seeta" Nitin Bose's "Badi Bahen," Franz Osten's 'Achuth Kanya,' V. Damle and Fathelal's 'Sant Thukaram,' Mehboob's "Wattan," "Ek hi Raasta" and "Aurat". For the first time, producer Ardeshir Irani attempted a colour picture in 1937 named 'Kisan Kanya'. A year later another film 'Mother India' was also made. The world war which broke out in 1939 delayed the advent of colour by several years.

The forties also witnessed the production of a few remarkable films such as Shantaram's "Dr. Kotnis Ki Amar Kahani," "Kalpana" by Uday Shanker, 'Chandra Lekha' by S.S. Vasan, Chetan Anand's "Neecha Nagar", Abbas's "Dharti Ke Lal," etc. In 1949, Sohrab Modi set a new standard in historical film with "Pukar." He later made historical like 'Sikandar' and Prithvi Vallabh'. Similarly Vijay Bhatt earned plaudits for his two mythologicals "Bharat Milap" and "Ram Rajya."

The first International Film Festival of India held in early 1952 at Bombay had great impact on Indian

Cinema. For the first time, the industry and the film goers saw what a vibrant cinema existed, outside Hollywood. Films like 'Bicycle Thieves,' 'Yukiwarisoo' captivated their imagination.

The big turning point came in 1953 with the arrival of Satyajit Ray and his classic 'Pather Panchali.' International recognition came to it with the Cannes award for 'the best human document' followed by an unprecedented crop of foreign and national awards.

In Hindi cinema also the impact of neorealism was evident in some distinguished films like Bimal Roy's 'Do Bigha Zamin', Mehboob's 'Aan' and 'Mother India', K.A. Abbas's 'Munna' and 'Rahi', Raj Kapoor's 'Awaara,' 'Boot Polish' and 'Jagte Raho,' V. Shantaram's 'Do Ankhen Barah Haath', Guru Dutt's 'Pyaasa' etc. Apart from the production of these significant films, the fifties opened a vast international market for Indian films.

It was in the fifties that such films as 'Baiju Bawra,' 'Naya Daur,' 'Devadas,' 'Shree 420', 'Jhanak Jhanak Payal Baje', 'Sujata,' 'Madhumati', 'Anari', 'Kanoon' 'Kagaz ke Phool' etc. were made. The first Indo-Soviet co-production "Pardesi" was also made by Abbas during the fifties.

The transition to colour and the consequent preference for escapist entertainment and greater reliance on stars brought about a complete change in the film industry.

The sixties began with a bang with the release of K. Asif's 'Mughal-E-Azam' which set a record at the box office. It was followed by Raj Kapoor's 'Jis Desh Mein Ganga Behti Hai,' and Dilip Kumar's 'Gunga Jamuna.' B.R. Chopra's 'Waqt,' Raj Kapoor's 'Sangam,' Dev Anand's 'Guide' Chetan Anand's 'Haqueequat' Pramod Chakravarthy's 'Love in Tokyo' Devendra Goel's 'Ek Phool Do Mali,' Ramanand Sagar's 'Arzoo' and 'Ankhen' Sakthi Samantha's 'Aradhana,' Raj Khosla's 'Do Raaste,' Guru Dutt's 'Sahib Bibi aur Gulam', Manoj Kumar's 'Upkar', O.P. Ralhan's 'Phool aur Pathar' were other significant hits of the decade.

The seventies had further widened the gap between multistar block busters and small-budgeted off beat films. The popular Hindi hits of the decade include 'Johny Mera Naam,' 'Haathi Mere Saathi,' 'Mera Gaon Mera Desh,' 'Pakeeza,' 'Bobby', 'Abhiman', 'Jugnu', 'Zanjeer,' 'Victoria 203,' 'Seeta aur Geeta,' 'Sholay,' 'Muquaddar Ka Sikandar,' 'Deewar,' 'Khoon Pasina,' Mr. Natwarlal, 'Hera Pheri,' 'Yadon Ki Baarat,' 'Hum Kisise Kum Nahin,' 'Kabhie Kabhie,' 'Shor', 'Roti Kapada aur Makan'. 'Dharam Veer', 'Amar Akbar Antony'. Of these, majority of the films were action oriented with revenge as the dominating theme.

The emergence of the *New Indian Cinema* in the late sixties as a recognizable movement was partly a reaction to the popular cinema's "other worldliness."

Satyajit Ray, Mrinal Sen and Ritwik Ghatak are the founding fathers of the *new cinema* in India. Ray has a special vision of the Indian reality - hard, implacable, piercing to the heart of the matter in an unbearably truthful yet moving fashion. He has made 27 full length feature films and a few documentaries. Pather Panchali, Aparajito, Apur Sansar, Charulata, Devi, Goopy Gyne Bagha Byne, Seemabadha, Ashani Sanket and Jana Aranya are some of his outstanding films.

Mrinal Sen is the ebullient one - experimenting with neorealism as well as new wave and fantasy. His notable films are Bhuvan Shome, Chorus, Mrigaya, Ek Din Pratidin, Akaler Sandhane and Genesis. Like Ray, Mrinal Sen also has won several awards both national and international.

Ritwik Ghatak in a sense is the most disturbing figure. His films constitute a record of the traumas of change - from the desperation of the rootless and deprived refugees from East Bengal. (Meghe Dhaka Tara, Komal Gandhar, Subarnarekha).

A whole new group of film makers emerged on the Bengal scene. Notable among them were Tapan Sinha, Tarum Majumdar, and Buddhadeb Dasgupta (Kabuliwala, Ganadevta Dooratwa). They continued the breakaway tradition of Ray and made some significant contributions in their own individual styles.

In Bombay, from the *new cinema* group there came Basu Chatterji's "Sara Akash", Rajinder Singh Bedi's "Dastak", Mani Kaul's "Uski Roti", "Ashad ka Ek Din" and "Duvidha", Kumar Shahani's "Maya Darpan", Awtar Kaul's "27 Down", Basu Bhattacharya's "Anubhav" and "Aavishkar", M. S. Sathyu's "Garam Hawa", Kanthilal Rathod's 'Kanku', etc. Shyam Benegal's advent with "Ankur" has been a significant event of the seventies. He has since made notable films like "Manthan", "Nishant", "Bhumika", "Junoon", "Kalyug", "Trikal", etc.

The south won national attention when Malayalam 'Chemmeen' (1965) by the late Ramu Kariat bagged the President's Gold Medal. Pattabhi Rama Reddy's 'Samskara' (1970) and Adoor Gopalakrishnan's 'Swayamvaram' (1972) were the trend setters in Kannada and Malayalam respectively. This trend continued with a series of socially conscious and relevant films like M.T. Vasudevan Nair's "Nirmalyam" (1973), B.V. Karanth's 'Chomana Dudi', the late G. Aravindan's 'Utharayanam' and 'Thamp', Girish Karnad's 'Kaadu', Girish Kasaravalli's 'Ghatasradha', Adoor Gopalakrishnan's 'Kodiyettam', P.A. Backer's "Chuvanna Vithukal" and K.G. George's 'Swapnadanam'.

The Hindi avante garde reached its bloom period towards the end of the seventies with the coming of film makers like Govind Nihlani (Aakrosh), Saeed Mirza (Albert Pinto ko Gussa Kyon Aatha Hai), Sai Paranjpe (Sparsh), Rabindra Dharmaraj (Chakra), Musaffar Ali (Gaman) and Biplab Roy Chowdhary (Shodh). The movement spread to the other regional cinemas such as Marathi, Gujarathi, Assamese and Telugu. Directors like Jabbar Patel, Ramdas Phuttane, Ketan Mehta, Jahnu Barua and Gautam Ghose came to the scene with films such as Simhasan Sarvasakshi, Bhavni Bhavai, Aparoopa and Ma Bhoomi.

The late 1980s saw the revival of musical love stories in Hindi Cinema.

Far in the south also film makers such as K. Balachander, Jayakanthan, John Abraham, Bharathan, Padmarajan, Balu Mahendra, K. R. Mohanan, C. Radhakrishnan, G. S. Panicker and a few others presented some significant films such as Avargal, Unnai Pol Oruvan, Agraharathil Kazhuthai, Prayanam, Peruvazhiambalam, Kokila, Aswathama, Agni and Ekakini.

The 'new wave' masters Adoor and Aravindan consolidated their position not only in Malayalm Cinema but in Indian and world cinema as well with films suchas Elippathayam, Mukhamukham, Anantharam, Esthappan, Pokkuveyil, Chidambaram and Oridath. Elippathayam won the British Film Institute award for the year 1982.

Shaji N. Karuns' "Piravi" (88) bagged more than a dozen national and international awards and was shown in nearly forty film festivals. Last year Adoor's 'Mathilukal' won the FIPRESCI award and UNICEF award from Venice.

Prema Karanth, Aparna Sen, Vijaya Mehta, Nirad Mohapatra, Prakash Jha, Nabendu Ghosh Mani Ratnam and Pavithran became popular with their films such as Phaniyamma, 36 Chowringhee Lane, Pestonjee, Maya Miriga, Damul, Trishagni, Nayagan and Uppu.

The late eighties saw the revival of the musical love stories in Hindi Cinema. (Mr. India, Nagina, Tezaab, Qayamat se Qayamat Tak, Tridev, Rakhwala, Chandni, Ram Lakhan, Maine Pyar Kiya, etc.) Vinod Chopra's 'Parinda' and Adithya Bhattacharya's "Raakh" were films with different style and treatment.

A young director, Meera Nair, won national attention in 1989 by winning the Golden Camera Prize at Cannes for her maiden film 'Salaam Bombay'.

There are 12,000 cinema halls and 60,000 video parlours in India. Of the 12,000 theatres 7000 are in A.P., Karnataka, Kerala and Tamil Nadu. In the eleven North Indian States including U.P. there are only 1772 theatres.

Export of Indian films has been on the decline since 1980-81, which was the peak year with sales crossing Rs. 15 crore and 1986-87 saw the lowest trade of Rs. 7.5 crore only. Lately the trend has been reversed.

Government and the Cinema

The Central Board of Film Certification *under the Ministry of Information and Broadcasting functions as regulatory body. Their certificate is mandatory for public exhibition of films. The Central Board having its office at Bombay has 6 regional offices at Bangalore, Bombay, Calcutta, Hyderabad, Madras and Thiruvananthapuram.*

The Film and Television Institute of India *was established in 1960 at Pune, by the Government of India, with the object of imparting technical training in a systematic manner in the art and craft of film making. On October 1, 1974 the institute became a society registered under the Registration of Societies Act of 1860.*

The Film Wing offers courses leading to Diploma in Cinema with specialization in areas like direction, cinematography, editing, sound recording and sound engineering. K.G. Verma is the present Director.

National Film Archive of India *(NFA) with headquarters at Pune is a pioneer institution set up in 1964 with the objective of acquisition and preservation of National Cinema, film classification, documentation and research encouraging film technology and spread of film culture in the country. The Archive has a collection of more than 6500 films from all over the world. NFAI has regional offices at Calcutta, Bangalore and Trivandrum. P.K. Nair is the Director.*

National Film Development Corporation *was set up in 1960 to promote the production of good cinema. In 1975 FFC was merged with the Indian Motion Picture Export Corporation (IMPEC). It has financed nearly 150 feature films so far. NFDC also plays an important role in the import of foreign films and in the export of Indian films. Noted film producer D.V.S. Raju is the present chairman.*

Directorate of Film Festivals *is entrusted with the task of organizing International Film Festivals in India every year. It also arranges for the selection and entry of Indian films to film festivals held in other countries. The Directorate organizes the National Film Awards annually.*

Children's Film Society: *The Society was formed in 1955. It produces feature films and short films for children. It organizes subsidized shows and distributes film prints. The Society also organizes an International children's film festival every alternate year in India. Ms Shabana Azmi is the Chairperson of the Society.*

Films Divisioin *established in 1948. Indian Films Division is perhaps the world's largest single producer and distributor of news reels and documentaries. It is functioning under the Ministry of Information and Broadcasting.*

TOURISM: THE LATE SPURT

The target of wooing 2 million tourists during the 1991 *Visit India Year* could not be attained because of the Gulf War and the political upheavals in Europe and elsewhere and the unsettled conditions in North India. Though the devaluation of the Rupee was an unexpected boon for the incoming tourists it affected the out-bound tourists adversely. However, South India has emerged as an alternate destination point for foreign visitors.

After almost a year of virtual stagnation, foreign tourist arrivals were picking up and if all went well, by the end of the winter, the traditional peak tourist season, things should be back to normal.

As against the original estimates of 1.7 million tourists, 1.5 million would have visited India by the end of the year.

In a year that started off with a minus rate of tourist arrivals (minus 26 per cent in February 1991), the tourism department maintains that this is a creditable performance.

January to March, which is when tourist traffic usually peaks, were minus months. Then there was a turn around in May and the summer months, when tourist arrivals normally slump, saw a positive growth with August registering a 5.6 per cent growth.

The bulk of tourists came in from Spain. Infact, the traffic was so heavy from Spain that the Department of Tourism had to request the Ministry of External Affairs to sanction extra staff for the Indian Embassy in Madrid to cope with the demand for visas.

With the crisis in Yugoslavia and the continuing tension in the West Asia, the tourist traffic that normally goes to the Adriatic region, Cairo, etc. turned to India.

Internal strife, political instability, a war in the Gulf, trouble in East Europe and the Soviet Union have all contributed to the ups and downs of tourist arrivals.

Adverse conditions for India began in June 1990 as tensions in Kashmir, Punjab and Assam rose. The anti-Mandal stir, the Ayodhya tension and the subsequent collapse of the V.P. Singh Government made things worse and the figures nose-dived through the winter months to reach an all time low in February due to the Gulf War.

The Tourism Department has identified 15 major "tourist circuits" all over the country for concentrated development in terms of infrastructure like hotels, wayside facilities, information counters, adventure sports, recreational activities and so on. The idea is to remove as many obstacles as possible and pump in funds in a planned manner for proper growth rather than the diffused development India has seen so far.

In addition, the Government has now realised the importance of strengthening its data base on tourism so that it knows how to target its plans and publicity towards the high volume low-budget tourist (the backpackers, young couples, etc.) as well as the low-volume high-budget travellers (older couples, corporate executives, etc.).

Another major weakness is the total lack of recreational activities in the evening. And this apparently is a consistent complaint from most tourists. There is plenty to do during the day - sightseeing, shopping and so on but after 1 p.m. India goes dead.

Planners are toying with several ideas including the one to set up casinos in five star hotels for foreign passport holders. The only one that seems to have materialised so far is a floating restaurant on the Fathehsagar lake in Udaipur to be billed as an evening of food, wine and music on a barge built along the lines of the famous boat owned by the Maharajah of Udaipur.

Devaluation of the Rupee by nearly 20 per cent will mean a considerable fall in the package tours to foreign countries from India, on account of the increase in costs, but the much-awaited flow of tourists to India is expected to increase.

Emphasising outbound tourism, which means package tours to foreign destinations from this country, the majority of tour operators feel that this business would now come to a standstill.

A three-week tour to one country in Europe, for instance, cost around Rs. 25,000 five years ago. Over the years the figure went up to Rs. 50,000, but now it would be priced 20 per cent higher.

However, there is likely to have a boom in tourist traffic to India as the devaluation has made visit to India cheaper by 20 per cent.

Outbound Tour cost after devaluation

Place	Earlier cost	Cost
	Rs.	Rs.
Bangkok, Hong Kong, Singapore	22,000	23,927
Japan	30,000	32,202
Europe	41,500	44,088
U.S.A.	54,800	57,785
Mauritius	11,600	12,100

Following the devaluation, the cost of a package tour has increased by seven to 10 per cent. For example a tour to Mauritius which cost Rs. 10,000 (a personal budget) would now cost Rs. 1,200 more.

Moreover, a traveller who had to pay Rs. 15,548 for his foreign travel allowance would now have to pay Rs. 3,036 more.

On account of the devaluation, a foreign tourist would now pay fewer dollars for the same services rendered. Hotel rooms, however, would not become cheaper in those hotels where the dollar tariff was in existence for the past one year.

A few hotels like the Taj had been charging foreign tourists in dollars to guard against currency fluctuation.

Hotels which charged in Rupees would become cheaper by 20 per cent. Goods and other items of tourist value would also cost 20 per cent less.

But as the June issue of UK-based travel magazine *Travel Trade Gazette,* has reported: "India's continuing problems will mean a fall in holiday sales for some time. Bookings had slumped as a result of the country's massive internal problems culminating in the assassination of Rajiv Gandhi and election violence".

The report in the British travel journal quotes a spokesman of an India hotel group that dollars rates introduced last year, were in line with the practice prevalent in other neighbouring countries, such as Sri Lanka and Nepal.

There was also an element of national interest involved, as the dollar rate helped boost foreign exchange resources. The journal said that at least one British tour operator saw nothing to complain about the new rates.

Travel Circuits: The Ministry of Tourism, Government of India, in consultation with the Departments of Tourism in the Southern States has selected the following new travel circuits in the South: 1. Cochin-Alleppey-Kottayam-Thekkady-Kodaikanal-Madurai; 2. Coimbatore-Coonoor-Udagamandalam (Ootty)-Mudumalai-Sultan Battery-Mysore-Bangalore; 3. Madras-Mamallapuram-Kancheepuram-Pondicherry and 4. Tiruchi-Thanjavur-Nagapattinam-Chidamabaram-Gangaikonda Cholapuram.

These are extension circuits in addition to the six circuits already existing in the South. They are: The grand temple tour of Madras-Madurai, Tiruchi-Madras, the Sandalwood and Spices tour of Madras-Mysore-Cochin-Madras, the Malabar special of Madras-Trivandrum-Cochin-Madras, the Sun and Sand tour of Madras-Andamans-Madras, the Monuments and Beaches circuit of Madras, Hyderabad-Vizag-Madras, and the Blue Mountains tour of Madras-Ootty-Mysore-Madras.

The newly identified Southern Circuits are expected to help in diverting the bulk of tourist traffic from the golden triangle (Delhi-Agra-Jaipur) to the southern part of the country. In the backdrop of disturbing situation in Jammu and Kashmir and North Indian States, South is expected to hold aloft the charm of India as a tourist destination. A calendar of 46 fairs and festivals also has been drawn up for promotion.

The tourism industry produces direct and indirect employment to nearly 1.3 million people in the country.

India's share poor: Although 1.3 million foreigners visited India in 1989 (1.2 million in 1988), the country's share in earnings from international tourism remained at just above one per cent. (Thailand, with a fraction of India's area and population had more than four million in 1988). During the 'Visit India Year' efforts would be made to attract tourists from the United States, Britain, Western Europe, Japan, West Asia and Australia.

Tourism is currently India's largest domestic generator of foreign exchange–Rs. 2,456 crore in 1989 and Rs. 2,103 crore in 1988. Recognising the significance of tourism as a tool of economic development, the National Development Council (NDC) in 1984 gave it the status of an industry.

India's efforts to promote tourism have been monumental. Besides promoting India through the electronic media for the first time, the department has also helped organise Festivals of India abroad and smaller promotional programmes for travel agents, tour operators and the media.

A Festival of India was organised in Germany from September 1991. Similar festivals were earlier held in USA, UK, USSR, Sweden and France.

Tourism is a way of utilising resources which would otherwise remain idle—for instance landscapes and cultural sites.

Fifty per cent of the earnings in foreign exchange are exempt from income tax. The balance is exempt if re-invested in the tourism industry. There are a series of other direct and indirect tax benefits.

Hotel Institute For South Asia

The 15th Institute of Hotel Management and Catering Technology under the Union Ministry of Tourism was opened at Kovalam near Thiruvananthapuram, Kerala, on December 15, 1990. This Institute, the first of its kind in the State, offers a three-year diploma course in hotel management and catering technology. Though the present intake is 60, it will be increased to 120 in 1991.

The new building complex of the Institute with an outlay of Rs. 3 crore will be completed by April 1991.

The Institute is to be developed as a South Asian Training Centre under a UNIDO Scheme.

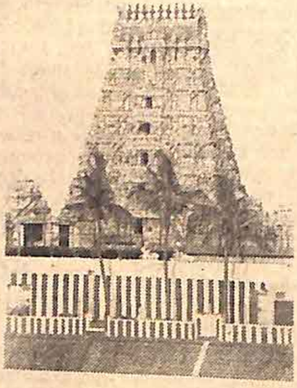
Go South: London Times

The very exclusive British newspaper The Times is organising for the benefit of its readers three specially arranged 18-day tours in 1992 of South India which it calls a "Still, largely unknown region."

The Times has waxed eloquent on the region: " South India is a land of exotica. Its spices stimulated European merchants to chart unknown seas and discover new lands, and India's finest silk is woven and cultivated there. The Hindu temples are coated in a riot of dancing and battling gods, and the white beaches are some of the most beautiful. At Madras, the British got their foothold in a continent that has seen many empires come and go.They left spectaclar buildings and a phenomenally rich heritage."

It all sounds very much like novelist John Masters re-iving the Raj. Rather appropriately, the tours will be led by Louise Nicholson, associate producer of the Channel 4 series "The Great Moghuls," who has visited India 30 times and written extensively on it.

After arrival in Madras on a British Airways direct flight from Heathrow, the first five days of the tour will be spent "in a relaxing hotel on the beach" near the fishing village of Covelong while taking in "the splendid and historic buildings of Madras," the seventh century temples of Mahabalipuram, and Kanchipuram, "one of India's seven sacred cities renowned for its fine temples and silk weavers."



The tourists will then drive down to Pondicherry, " a French settlement founded in 1674 and maintained until 1954, when it was left an atmospheric colonial ghost town." That will be followed by a visit to "the great temple of Chidambaram, famous for its 10th century dance carvings."

Then comes an inland drive through "the paddy fields and villages of rural Tamil Nadu," for an overnight stop at Thanjavur, "once the capital of the Chola empire in the 10th and 11th centuries." The eighth-day of the tour will be spent in visiting "Some of South India's greatest temples" at Thanjavur and Tiruchirapalli.

On the ninth day, the tourists fly to Bangalore, "a spacious garden city of wide streets and Victorian buildings." After an overnight rstay, they drive "through the ugged landscape of Karnataka" to take in Hampi, "the now deserted capital of the Vijayanagaras (Sic!) who founded an empire which, at its height in the early 14th century (should be fifteenth or sixteenth), rivalled Rome in splendour."

After a full day exploring Hampi, the tourists drive down "to the rural town of Badami, which, with the towns of Aihole and Pattadakkal, saw the flourishing of the Chalukya rulers in the seventh and eighth century. They left behind some of the earliest Hindu architecture, well-preserved temples and blossoming trees."

"No tour of India,' says The Times at this stage, "is complete without a train journey." Hence after a leisurely morning drive to Hubli on the 13th day, the tourists board the overnight train to Goa for "a scenic journey which crosses the Western Ghat Hills and then descends to the Arabian Sea."

The next three days are spent at "the luxurious Fort Aguada Hotel, surrounded by tropical gardens and miles of silvery beaches. Explore," says The Times, "Panaji, Goa's capital, with its pretty lanes, baroque churches and grand colonial homes."

On the penultimate day of the tour, the tourists fly to Bombay and, after an overnight stay at the airport hotel, they catch the early morning BA flight to Heathrow.

THE MEDIA

The Indian print media consists of 36 centenarians. The Gujarati daily *Bombay Samachar* published from Bombay is the oldest existing newspaper. It was established in 1822. Hindi dailies dominate in terms of numbers.

According to ABC (Audit Bureau of Circulation) certificates for July–December 1990, *Malayala Manorama* daily (Circulation: 6,44,074 copies) continues to be the largest selling daily in the country. *Indian Express* with 5,81,056, copies occupies the second position. *Nav Bharat Times* is in the third position with 5,17,854 copies.

Largest circulated Dailies – 1990

	copies
Malayala Manorama	6,44,074
Indian Express	5,81,056
Navbharat Times	5,17,854
The Hindu	4,52,918
Mathrubhumi	4,52,189
Times of India	4,32,672
Ananda Bazar Pathrika	4,08,773
Punjab Kesari	3,34,775
Hindustan Times	3,32,978
Sandesh	3,29,939
Eenadu	3,11,346
Daily Thanthi	2,97,064
Loksatta	2,61,554
Rajasthan Pathrika	2,60,106

Weeklies: *Malayala Manorama Weekly* is the largest selling weekly in the country (11,69,023 copies) during the period under review. *Mangalam*, another Malayalam Weekly, comes second with a circulation of 10,641,99 copies.

Fortnightlies: *India Today* (English) commands the largest circulation of 3,833,31 copies among fortnightlies. *India Today* Hindi has 2,639,59 copies.

Manorama Year Book (English) has been certified as the largest selling publication of its kind in India (ABC 1990: 1,26,125 copies)

India has 4 news agencies – Press Trust of India (PTI), United News of India (UNI), Samachar Bharati and Hindustan Samachar.

PTI was set up on August 27, 1947.. It took over from the Associated Press of India (API) and Reuters. It has 124 news bureaux in the country including computerised offices in the four metropolitan cities.

UNI was registered as a company in 1954 and started news operation in 1961. In 1982 it launched its Hindi news services 'UNIVARTA'. It operates a news service to the media in four Gulf countries.

Circulation (lakhs) of ABC members: 1989

State	Dailies	Non-dailies	Total
Andhra	7.40	9.20	16.60
Bihar	1.97	9.62	11.59
Delhi	7.54	9.20	16.74
Gujarat	15.47	7.79	23.26
Kerala	14.86	30.87	45.73
Karnataka	7.52	9.87	17.34
M.P.	6.00	4.52	10.52
Maharashtra Goa	21.64	30.70	52.34
Orissa	1.66	1.85	3.51
Punjab/HP Haryana/J & K	10.36	6.04	16.40
Rajasthan	3.27	3.27	6.54
Tamil Nadu	10.03	25.19	35.22
U.P.	7.48	13.20	20.68
W. Bengal	9.10	13.69	22.79
N.E. States	1.86	1.63	3.49
Total	126.16	176.59	302.75

No. of Newspapers –Languagewise, 1986

Language	Dailies	Weeklies
Hindi	554	2900
English	138	440
Assamese	3	28
Bengali	52	433
Gujararati	41	177
Kannada	93	173
Kashmiri	–	1
Malayalam	118	125
Marathi	132	391
Oriya	17	42
Punjabi	29	192
Sanskrit	2	4
Sindhi	7	22
Tamil	113	134
Telugu	42	167
Urdu	182	723
Bilingual	35	382
Multilingual	9	68
Others	42	67
Total	1609	6469

Under the Press Council Act, 1978, the first *Press Council of India* was constituted in 1979, the second in 1982, the third in 1985 and the fourth on

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Fluorescent Whitening Agents

For Paper: Swetak CT
For Cotton: Textiles & Viscose: Swetak MNA and Swetak CR
For polyamide: Swetak NR
For polyester: Swetak PE-R

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Quiniodochlor I.P.,Nikethamide I.P., Saccharin Insoluble, Saccharin Sodium I.P.,Halazone N.F., Tolbutamide I.P.

Pharmaceutical Intermediates

Dicalcium Phosphate (Dentifrice Grade), Dicalcium Phosphate (I.P. Grade), Methyl Dichloro Acetate, Tolyl-p-Sulphonyl Ethyl Carbamate Para Chlorobenzene Sulphonamide, Para Toluene Sulphonamide, Para Toluene Sulphonyl Chloride Ortho Toluene Sulphonamide and Urethane.

Dyes Intermediates

Beta Naphthol, B.O.N. Acid, Chicago Acid, Metanitroaniline G.Salt, Gamma Acid, H. Acid, J.Acid, J.Acid Urea, Phenyl J.Acid, Rhoduline Acid, Metaphenelyenediamine (Distilled) Peri Acid, Schaeffer's Acid, Phenyl Peri Acid, Sodium Naphthionate, Sulphanilic Acid, Tobias Acid, Mitchler's Ketone Mono Ethyl Aniline, R Salt Para Nitro Aniline(Technical), Meta Nitro Para Toluidine Para Cresidine,2-Naphthylamine 1:5 Di-Sulphonic Acid,2- Naphthylamine 3:6:8 Tri-Sulphonic Acid,N Methyl J. Acid(Pure),2-Aminophenol-4-Sulphonic Acid,5-Sulpho Anthranilic Acid.

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September 28, 1988. It is meant to safeguard the freedom of press, maintain and improve the standard of newspapers and news agencies. Mr. Justice R.S. Sarkaria is the present Chairman.

Television: TV was introduced in India in September, 1959 with the establishment of a centre at Delhi as a pilot project. Over the years, it acquired its Indian name *Doordarshan* and expanded its reach and area of activities in the spheres of information, education and entertainment.

The Parliament in 1990 passed the 'Prasar Bharati' (Broadcasting Corporation of India) bill to give autonomy to Doordarshan and Akashvani.

Doordarshan net work had 480 transmitters by the end of 1989. This increased to 510 by the end of 1989–90. The number was proposed to increase to 545 by the end of the 7th plan. T.V. covered 82 per cent of population and 67.6 per cent of the area. The number of T.V. producing centres is being increased to 48.

Delhi, Bombay, Calcutta and Madras have second channels. This is to be extended to 16 other state capitals during the 8th Plan.

The country's highest TV tower (235 metres – three times taller than the historic Qutab Minar) was commissioned at Peetambara, New Delhi on November 7, 1988. A Central Production Centre (CPC) was opened in Asiad Village, New Delhi on February 6, 1989.

INSAT multiple service project has been made use of by Doordarshan for direct telecast of the programme and for the national networking of the existing terrestrial transmitters through the use of microwave system. Telecasts of higher education programmes which commenced on August 15, 1984, via INSAT-1B continue successfully.

On August 15, 1984, a daily national programme for a simultaneous telecast throughout the country was introduced. 1987 saw the introduction of daily morning telecast of news and light features. Daily afternoon transmission mainly for elderly people was introduced on January 26, 1989. Two mid-day news bulletins were introduced in 1990.

The commercial service of Doordarshan made a modest beginning in January, 1986. The service has been extended through more Kendras resulting in substantial increase in revenues as is evident from the following figures.

1982–83 Rs. 15.89 crore
1983–84 Rs. 19.79 crore
1984–85 Rs. 31.43 crore
1985–86 Rs. 60.20 crore
1986–87 Rs. 98.32 crore
1987–88 Rs. 100.00 crore
1988–89 Rs. 161.30 crore
1989–90 Rs. 210.13 crore

T.V. Sets: The first indigenous Black and White TV receiver was produced in India in 1969. From a production level of a few thousand sets in 1970, the industry grew to produce 5.7 million sets in 1988. Of this 4.4 million were black and white and 1.3 million colour. It is estimated that at the end of 1989 India had about 22.5 million TV sets. This is expected to go up to 29.2 million by 1990 and 45.6 million by 1992.

Radio: Broadcasting in India started in 1927 with two privately owned transmitters in Bombay and Calcutta. The government took them over in 1930 to establish the Indian Broadcasting Service. The name was changed to All India Radio (AIR) in 1936 and since 1957 it is known as Akashvani.

Against 90 transmitters in the country at the beginning of the Seventh Plan (1985-90), there were 180 by the end of 1989-90 including FM ones.

T.V. sets in lakhs: 1989

State	Black and white	Colour	Total
Andhra	11.01	2.75	13.76
Bihar	7.02	2.47	9.49
Delhi	10.51	3.14	13.65
Gujarat	9.46	4.65	14.11
Kerala	2.35	2.54	4.89
Karnataka	9.51	4.08	13.59
M.P.	10.49	3.69	14.18
Maharashtra	28.83	12.35	41.18
Orissa	2.17	1.71	3.88
Punjab/HP Haryana/J&K	15.43	3.15	18.58
Rajasthan	6.60	1.16	7.76
Tamil Nadu	12.51	4.86	17.37
U.P.	22.27	4.24	26.51
W. Bengal	17.65	3.88	21.53
N.E. States	3.92	0.98	4.90
Total	169.73	55.65	225.38

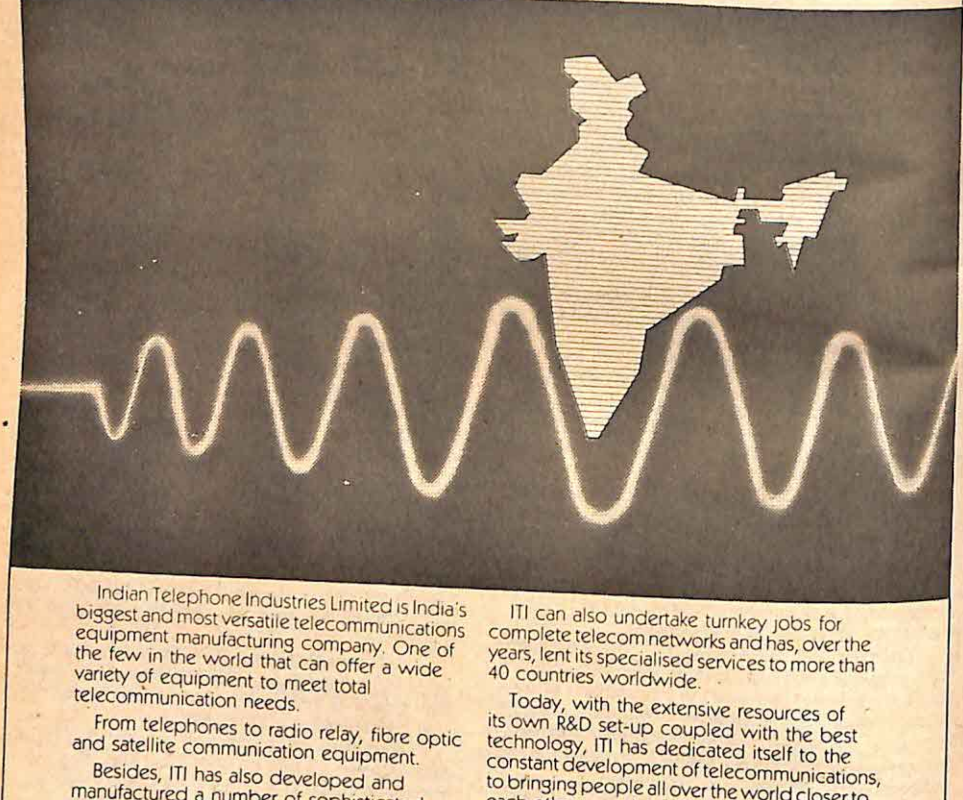
With the completion of the Plan, the country will have 205 transmitters—150 MW transmitters with a total power of 10,856 kW and 54 SW transmitters with a total power of 7,293 kW.

A *national radio channel* commenced broadcasting programmes on May 18, 1988. The transmission originating from Delhi is being beamed all over the country through a 1000 kW transmitter at Nagpur.

The News Service Division broadcasts every day 273 news bulletins for a duration of over 37 hours in its home, external and regional services. In the home service from Delhi, 78 bulletins are put out in 19 languages for a duration of over 11 hours. The external services broadcast daily programmes for 9 hours in 23 languages.

The *Vividh Bharati Service* provides entertainment to listeners. Two high power short wave transmitters in Madras and Bombay carry the transmissions. There are 32 *Commercial Broadcasting* centres. Ten percent of the total broadcasting time is allotted to advertisement. Gross income earned in the first 6 months of 1989–90: Rs. 16.82 crore.

THE INDIAN LINK IN INTERNATIONAL TELECOMMUNICATIONS



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Milestones in Communication

35000B.C. Cro-Magnon period; speculation that language existed.
22000 B.C. Pre-historic cave paintings.
4000 B.C. Sumerian writing on Clay Tablets.
3000 B.C. Early Egyptian hieroglyphics.
2000 B.C. Mohanjo Daro and Harappan script and seals.
1800 B.C. Phoenician alphabet.
1000 B.C. Early Greek Script.
600 B.C. Earliest Latin inscriptions.
450 B.C. Carrier Pigeon used by the Greeks.
130 B.C. Library of Alexandria built.
350 A.D. Books replace scrolls.
600 Book printing in China.
676 Paper and ink used by Arabs and Persians.
1200 Paper and ink art in Europe.
1453 Gutenberg Bible printed.
1562 First monthly newspaper in Italy.
1594 First magazine in Germany.
1639 First printing machine in North America.
1642 Early adding machine developed by Blaise Pascal.
1709 Copy-right law in England.
1791 First Amendment to the US Constitution.
1819 Flat-bed press invented by David Napier.
1827 Photographs on metal plates.
1830 "Analytic Engine" (Computer) principles; Charles Babbage.
1835 Samuel Morse introduced the Telegraph.
1846 Sightening Press; high speed printing.
1855 Printing telegraphs, David Hughes.
1866 TransAtlantic cable completed.
1876 Telephone invented; Alexander Graham Bell.
1888 Radio waves identified.
1895 Radio telegraphy; Gulielmo Marconi.
1895 Motion picture camera; Auguste and Louis Lumiere.
1900 Speech transmitted via radio waves.
1912 Motion picture a big business.
1920 Home television speculated upon.
1927 American Telephone and Telegraph Company demonstrates T.V.
1936 Life magazine founded.
1942 First Electronic computer in US.
1946 Xerography invented; Chester Carison.
1947 Transistor invented; Bell Laboratories.
1949 First stored programme computer.
1951 Colour TV introduced in US.
1957 Russia launches the first satellite-Sputnik.
1958 Stereophonic recordings in U.S.
1961 Push button telephones introduced.
1962 Telestar satellite introduced.
1968 Portable video recorders introduced.
1970 Micro electronic chips coming into wide use.
1975 Flat wall TV screen invented.
1975 Fibre optic signal transmission now highly developed.
1975 First wide marketing of TV computer games.
1978 Video disc system test marketed.
1978 3-D TV demonstrated.
1980 Home computer available for less than $ 500.
1980 New breakthrough in space photography.
1981 Space shuttle 'Columbia' has successful mission.
1982 European consortium launches multiple satellites.
1982 Major advances in implementation of mobile telephone.
1982 India establishes wider TV network with colour.
1986 Live transnational television beaming through multi-satellite network.
1988 Japan introduces HDTV – High Definition Television-using new linear technology.
1989 Time Inc of the US becomes the world's largest media company when it buys Warner Communication for $ 14 billion.
1991 STAR TV starts operations towards Asia from Hong Kong; BBC launches 24-hour TV telecasts for Asia.

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Telecommunication in India has made a quantum jump during the last few years. By 1990 Subscriber Trunk Dialling (STD) facility was extended to over 850 centres in the country. International Subscriber Dialling (ISD) facility is available for 190 countries including China.

There are over 4 million telephone subscribers in India. More than 14.20 lakh are waiting for a phone connection.

India's international telecommunication began in 1870, with the commissioning of an undersea telegraph cable from London to Bombay via Aden by a private company. By the late 1960's satellite communication on a global co-operative basis was established through the INTELSAT (International Telecommunications Satellite Organisation) with headquarters in Washington) India commissioned the first INTELSAT Earth Station in Arvi near Pune in 1971 and the second one in Dehra Dun in 1976.

International gateway system was set up in Bombay in 1973 and in Delhi in 1979. The third was installed in Madras along with India's first undersea cable to Penang in Malaysia. The fourth gateway is being set up in Calcutta. In 1987 one more undersea cable connecting Bombay to the UAE was commissioned.

International telex and telefax services also have been firmly established. Videsh Sanchar Nigam is the agency looking after international operations.

***Postal Service:** The number of post offices which was 22,116 in 1947 had risen to 1,45,238 by the beginning of 1990. In terms of the mail volume handled, India ranks just after the UK, FRG, Japan, France and the USSR.*

The Indian Post Offices operate the largest savings bank in the country (Rs. 33897.4 crore and 80.93 million depositers). It is the biggest service department after the Railways, with 5,87,311 employees as on March 31, 1989.

STATES AND TERRITORIES

The Union of India, made up of 25 States and 7 Union Territories, is in a state of demographic transition. Demographic transition indicates the passage of a population from high mortality and fertility rates to low mortality and low fertility.

The 1991 census count placed the Indian population at 844 million as on March 1. The population has grown at an annual average rate of 0.83 per cent[*] between 1901 and 1951 and at a more rapid pace of 2.13 per cent in the post-independence period between 1951 and 1981 and at 2.35 percent between 1981 and 1991. If this rate continues until the year 2000, the Indian population would be 1025 million, about one-half more than what it is today.

There are many stages in the demographic transition beginning with a declining mortality and continuing fertility to a stage where both mortality and fertility rates decline more or less at the same rate and keep the population stable over a period of time.

The difference is essentially a difference of ratios between mortality and fertility rates in population group. The Indian nation is not a population group in this sense. Rather, it is made up of various population groups. These population groups tend to be so small that even a State may contain a large number of such groups.

Area wise, Madhya Pradesh happens to be the *biggest state* of the Union (443,446 sq km) had Goa the *smallest* (3,702 sq km). This means the smallest state of the Union is only 0.8 per cent of the biggest one. The biggest one, Madhaya Pradesh, covers 13.48 percent of the whole nation.

Here is the ranking according to area:

1. Madhya Pradesh	443,446 sq km
2. Rajasthan	342,239 sq km
3. Maharashtra	307,690 sq km
4. Uttar Pradesh	294,411 sq km
5. Andhra Pradesh	275,068 sq km

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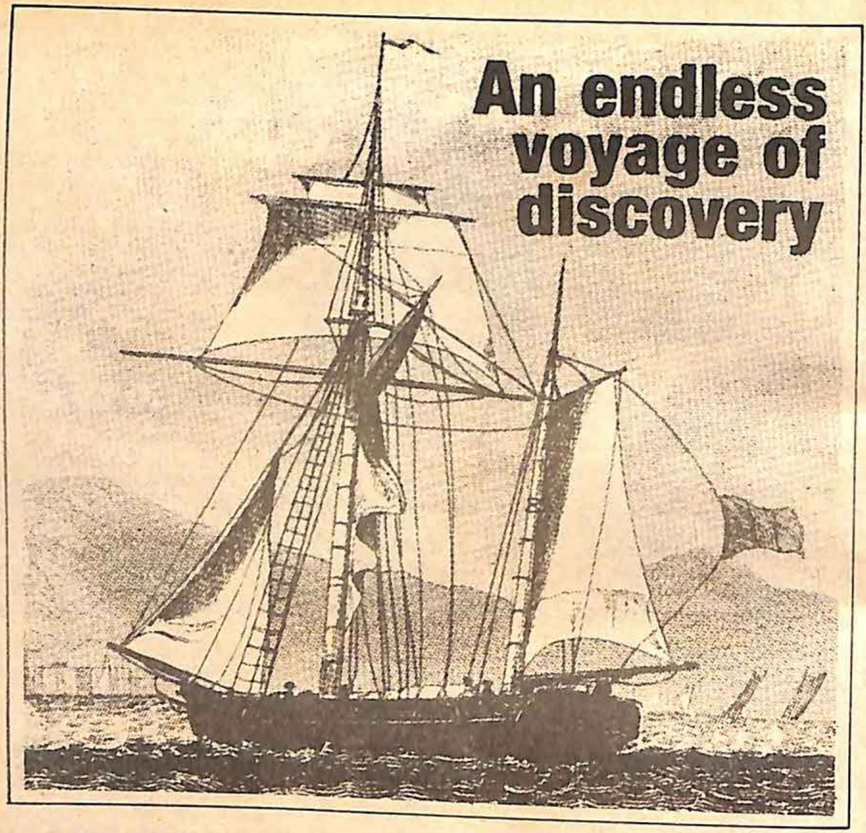
[*] Percentage based on the Provisional figure of 684 months.



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Union of India: Basic Data

Region	Capital	Area (sq km)	Population (1991)	
INDIA	New Delhi	3,287,263@	843,930,861	
States:	Capital:	Area (sq km)	Population (1991)	Percentage to All India†
1. Andhra Pradesh	Hyderabad	275,068	66,304,854	7.85
2. Arunachal Pradesh	Itanagar	88,743	858,392	0.10
3. Assam	Dispur	78,438	22,294,562	2.64
4. Bihar†	Patna	173,877	86,338,853	10.23
5. Goa	Panaji	3,702	1,168,622	0.13
6. Gujarat	Gandhinagar	196,024	41,174,060	4.87
7. Haryana	Chandigarh	44,212	16,317,715	1.93
8. Himachal Pradesh	Shimla	55,673	5,111,079	0.60
9. Jammu & Kashmir**	Srinagar/Jammu*	222,236	7,718,700	0.91
10. Karnataka	Bangalore	191,791	44,817,398	5.31
11. Kerala	Thiruvananthapuram	38,863	29,011,237	3.43
12. Madhya Pradesh†	Bhopal	443,446	66,135,862	7.83
13. Maharashtra	Bombay	307,690	78,706,719	9.32
14. Manipur	Imphal	22,327	1,826,714	0.21
15. Meghalaya	Shillong	22,429	1,760,626	0.20
16. Mizoram	Aizawl	21,081	686,217	0.80
17. Nagaland	Kohima	16,579	1,215,573	0.14
18. Orissa	Bhubaneswar	155,707	31,512,070	3.73
19. Punjab	Chandigarh	50.362	20,190,795	2.39
20. Rajasthan	Jaipur	342,239	43,880,640	5.19
21. Sikkim	Gangtok	7,096	403,612	0.04
22. Tamil Nadu	Madras	130,058	55,638,318	6.59
23. Tripura	Agartala	10.486	2,744,827	0.32
24. Uttar Pradesh†	Lucknow	294,411	138,760,417	16.44
25. West Bengal	Calcutta	88,752	67,982,732	8.05
Union Territories	Headquarters	Area (sq km)	Population 1981	Percentage to All India
1. Andaman & Nicobar Islands	Port Blair	8,249	277,989	0.03
2. Chandigarh	Chandigarh	114	640,725	0.07
3. Dadra & Nagar Haveli	Silvassa	491	138,542	0.01
4. Daman & Diu	Daman	112	101,439	0.01
5. Delhi	Delhi	1,483	9,370,475	1.11
6. Lakshadweep	Kavaratti	32	51,681	0.00
7. Pondicherry	Pondicherry	492	789,416	0.09

* Srinagar (Summer Capital), Jammu (Winter Capital).

† Uttar Pradesh, Bihar and Madhya Pradesh account for 31.2 per cent or more than one-third of the total population of India.

§ Projected.

@ The total area of the country represents provisional 'geographical area as on 31st March 1982, supplied by the Survey of India. The area includes 78,114 sq km under illegal occupation of Pakistan. 5,180 sq km illegally handed over by Pakistan to China and 37,555 sq km under illegal occupation of China.

**The 1991 Census has not yet been conducted in Jammu& Kashmir. The figures are as per projections prepared by the Standing Committee of Experts on Population Projections, October, 1989.

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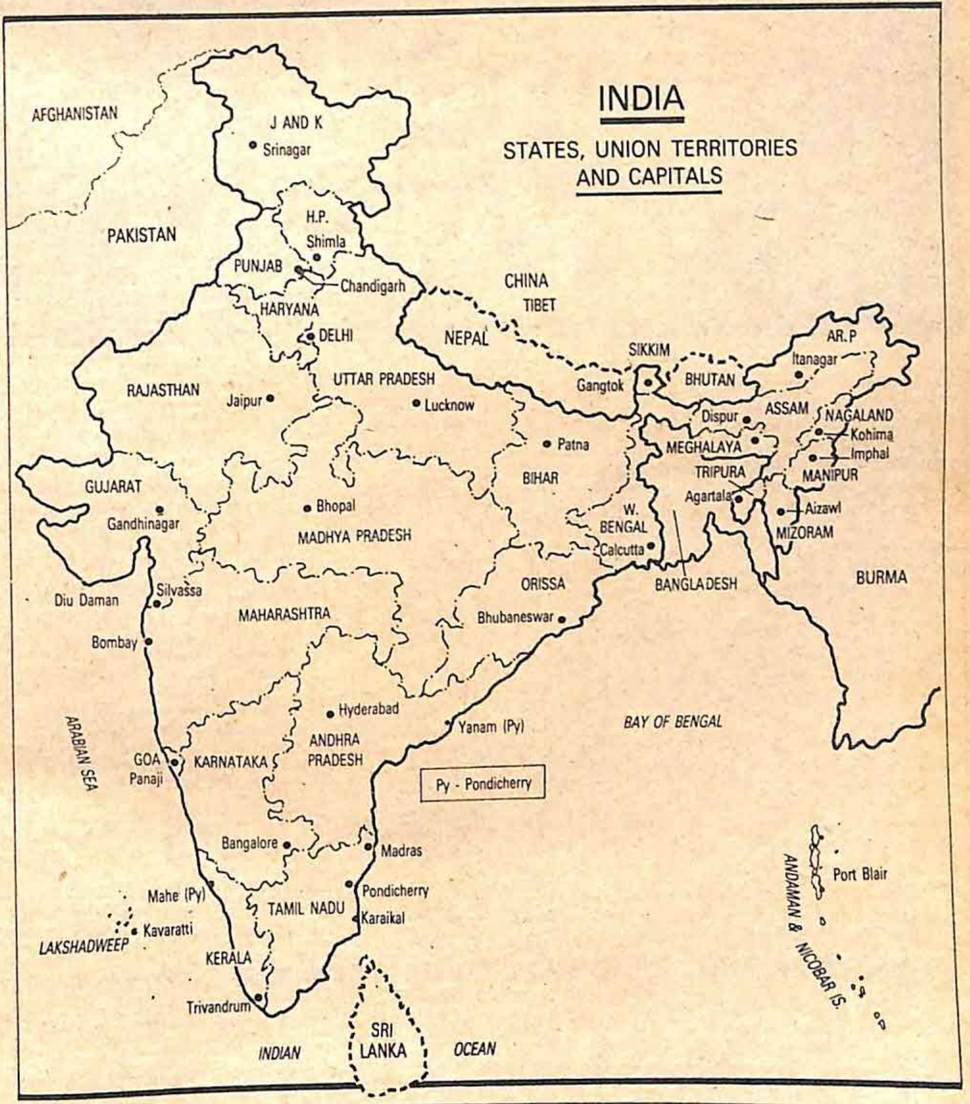
6. Jammu & Kashmir	222,068 sq km
7. Gujarat	196,024 sq km
8. Karnataka	191,791 sq km
9. Bihar	173,877 sq km
10. Orissa	155,707 sq km
11. Tamil Nadu	130,058 sq km
12. West Bengal	88,752 sq km
13. Arunachal Pradesh	88,743 sq km
14. Assam	78,438 sq km
15. Himachal Pradesh	55,673 sq km
16. Punjab	50,362 sq km
17. Hariyana	44,212 sq km
18. Kerala	38,863 sq km
19. Meghalaya	22,429 sq km
20. Manipur	22,327 sq km
21. Mizoram	21,081 sq km



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22. Nagaland	16,579 sq km
23. Tripura	10,486 sq km
24. Sikkim	7,096 sq km
25. Goa	3,702 sq km

Union Territories

1. Andaman & Nicobar Islands	8,249 sq km
2. Delhi	483 sq km
3. Pondicherry	492 sq km
4. Dadra & Nagar Haveli	491 sq km
5. Chandigarh	114 sq km
6. Daman & Diu	112 sq km
7. Lakshadweep	32 sq km

Largest State: Population wise, Uttar Pradesh is *the largest* State in India (138,760,417–Census 1991) and Goa *the smallest* (1,168, 622). UP's population is 16 per cent of India's total.

Here is the ranking according to population.

1. Uttar Pradesh	138,760,417
2. Bihar	86,338,853
3. Maharashtra	78,706,719
4. West Bengal	67,982,732
5. Andhra Pradesh	66,304,854
6. Madhya Pradesh	66,135,862
7. Tamil Nadu	55,638,318
8. Karnataka	44,817,398
9. Rajasthan	43,880,640
10. Gujarat	41,174,060
11. Orissa	31,512,070
12. Kerala	29,011,237
13. Assam	22,294,562
14. Punjab	20,190,795
15. Haryana	16,317,715
16. Jammu & Kashmir	7,718,700
17. Himachal Pradesh	5,111,079
18. Tripura	2,744,827
19. Manipur	1,826,714
20. Meghalaya	1,760,626
21. Nagaland	1,215,573
22. Goa	1,007,749
23. Arunachal Pradesh	858,392
24. Mizoram	686,217
25. Sikkim	403,612

Union Territories

1. Delhi	9,370,475
2. Pondicherry	789,416
3. Chandigarh	640,725
4. Andaman & Nicobar Islands	277,989
5. Dadra & N. Haveli	138,542
6. Daman & Diu	101,439
7. Lakshadweep	51,681

Andhra Pradesh

Area: 275,068 sq km. **Capital:** Hyderabad. **Districts:** 23; **Population:** 66,304,854; **Males:** 33,623,738; **Females:** 32,681,116; **Increase (1981-'91):** 12,755,181; **Growth Rate (per cent) 1981-'91:** 23.82; **Density (persons per sq. km.):** 241; **Sex Ratio (Females per 1000 Males):** 972; **Literacy (per cent):** 45.11; **Males:** 56.24; **Females:** 33.71. **Per capita:** Rs. 2184.

Physiography: Andhra Pradesh is the fifth largest state in India, both in area and population. Bounded by MP and Orissa in the north, the Bay of Bengal in the east, T. Nadu and Karnataka in the south and Maharashtra in the west, AP forms the major link between the north and the south of India. The northern area of AP is mountainous with an annual rainfall of 110 to 125 cm. The highest peak *Mahendragiri* rises 1500 m (4920 ft.) above the sea level. As we go further south, the rainfall comes down to 50 cm (20 inches) annually. The climate is generally hot and humid. AP is principally fed by the south west monsoon, the north fed by the south west monsoon, the north east monsoon contributing about one-third of the rainfall.

The *Krishna* and the *Godavari* are the major river systems in the state. The Godavari is the largest and the broadest river of South India. The Tungabhadra is an imporatant tributary of the Krishna. Other important rivers are the Pennar, Vamsadhara and the Nagavali. All these rivers are rainfed, and are of great economic significance because of their rich hydropower and irrigation potential.

History: The word 'Andhra' is equally applicable to the land, the people and the language, although the language in course of time developed a name of its own - *Telugu*.

The Andhras, originally an Aryan race, migrated to the south of the Vindhyas where they mixed with the non-Aryan stocks. Andhra Pradesh first enters history as part of the great Mauryan empire.

In the 13th century, the Kakatiyas, with their capital of Warrangal, dominated Andhra Desa. In 1323, the Tughlak Sultan of Delhi captured the Kakatiya ruler and ended the dynasty. The Tughlaks never cared to annex the Kakatiyan dominions and four local kingdoms arose out of the old Kakatiyan empire.

One of these kingdoms was Vijayanagar. The Vijayanagar empire stood as a bulwark against Muslim expansionism for more than 200 years. Vijayanagar had to contend with Muslim sultanates in the north time and again. Sometimes Vijayanagar joined one sultan against another. These tactics finally led to a grand alliance of the sultanates of Ahmadnagar, Bijapur, Golconda and Bihar against Vijayanagar. On 23rd January, 1565 the Deccan

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sultans humbled the mighty Vijayanagar army at the battle of Talikota.

The Qutb Shahis of Golconda laid the foundations of the modern city of Hyderabad. Emperor Aurangzeb routed the Qutb Shahis and appointed Asaf Jah the governor of Deccan. As the Mughal Empire tottered under Aurangzeb's successors, the Asaf Jahis made themselves independent rulers under the title of Nizam. The Nizams became involved in the Anglo-French wars in the Deccan and had finally to enter into a subsidiary alliance with the British in 1800.

Andhra Pradesh is the first state in India that has been formed on a purely linguistic basis. When India became independent, the Andhras, that is, the Telugu-speaking people, were distributed in about 21 districts, 9 of them in the Nizam's Dominions and 12 in the Madras Presidency. On the basis of an agitation, on Oct. 1, 1953, 11 districts of the Madras State were put together to form a new Andhra State with Kurnool as capital.

On Nov. 1, 1956 in accordance with the recommendations of the State Reorganization Commission, the Andhra State was enlarged by the addition of nine districts formerly in the Nizam's Dominion. Hyderabad, the former capital of the Nizam, was made the capital of the enlarged Andhra State.

AP thus consists of three distinct regions: (1) coastal region, made up of eight districts, generally called *Andhra*, (2) the interior region, consisting of three districts collectively known as *Rayalaseema* and (3) *Telengana* region, consisting of the capital Hyderabad and nine adjoining districts.

From 1969 to 1972 AP was rocked by riots, first in Telengana, then in Andhra on the question of bifurcation of the state. The Central Government refused to consider the question of bifurcation. A six-point formula was put forward by the Prime Minister Mrs. Indira Gandhi as a compromise. The formula was generally accepted and peace was restored in the state.

The six-point formula has been incorporated into the Constitution as the Thirty-second Amendment 1973.

Administration: The legislature in the A.P. is unicameral, the Legislative Assembly has 295 seats. A.P. Legislative Council was abolished on June 1, 1985.

State of Economy: A.P. has a widely diversified farming base with a rich variety of cash crops. It is surplus in foodgrains and can rightly claim to be the granary of the south. Agricultural sector accounts for around 50% of the State's income and provides livelihood for 70% of the population. The crops extensively cultivated in the state are Paddy, Jawar, Bazra, Ragi, Maize, Groundnut, Chillies, Tobacco, Cotton, Castor and Sugarcane.

A.P. leads all other states in the production of tobacco with a virtual monopoly of virginia tobacco. The production of oil seeds in 1989-90 was 24.28 lakh tonnes. Production of foodgrains reached 126.81 lakh tonnes in 1989-90.

There are 689 medium and large scale industries with a capital investment of Rs. 4100 crore providing employment for more than 4.44 lakh persons. Further there are 73,358 small scale units with investment of Rs. 968.17 crore providing employment to 7 lakh persons.

The first stage of Visakhpatnam Steel Plant has started functioning with the inauguration of the Blast Furance by the Prime Minister in May 1990.

Universities: Andhra University, Waltair; Agricultural University, Hyderabad; Open University, Hyderabad; University of Hyderabad, Hyderabad; Jawaharlal Nehru Technological University, Hyderabad; Osmania University, Hyderabad; Nagarjuna University, Guntur; Srikrishna Devaraya University, Anantapur; Sri Padmavathi Mahila Vishwa Vidyalayam, Tirupathi; Sri Venkateshwara University, Tirupathi; Telugu University, Hyderabad; University of Health Science, Vijayawada and Kakatiya University, Warangal.

Districts

District	Area (sq km)	Population (1991)	Headquarters
Andhra Region			
Anantapur*	19130	3,183,781	Anantapur
Chittoor*	15152	3,249,565	Chittoor
Cuddapah*	15359	2,259,154	Cuddapah
E. Godavari	10807	4,541,306	Kakinada
Guntur	11391	4,085,904	Guntur
Krishna	8734	3,693,179	Machilipatnam
Kurnool	17658	2,973,709	Kurnool
Nellore	13076	2,390,485	Nellore
Prakasam	17626	2,750,340	Ongole
Srikakulam	5837	2,314,442	Srikakulam
Visakhapatnam	11161	3,272,110	V. Patnam
Vizianagaram	6539	2,101,394	Vizianagaram
W. Godavari	7742	3,513,979	Eluru
Telengana Region			
Adilabad	16128	2,080,231	Adilabad
Hyderabad	217	3,091,718	Hyderabad
Ranga Reddy	7493	2,528,208	Hyderabad
Karimnagar	11823	3,043,228	Karimnagar
Khammam	16029	2,200,081	Khammam
Mahaboobnagar	18432	3,071,765	Mahaboobnagar
Medak	9699	2,264,124	Sangareddy
Nalgonda	14240	2,850,183	Nalgonda
Nizamabad	7956	2,034,794	Nizamabad
Warrangal	12846	2,811,174	Warrangal
Total		66,304,854	

* Rayalaseema.

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Tourist Centres: Andhra Pradesh is rich in historical monuments. It possesses many holy temples which attract large numbers of pilgrims and tourists.

Tirupati in Chittoor district houses one of the most famous temples in India. The presiding deity is known as Venkateswara. The main temple is situated on a hill-top, Tirumalai, and is a masterpiece of South Indian architecture.

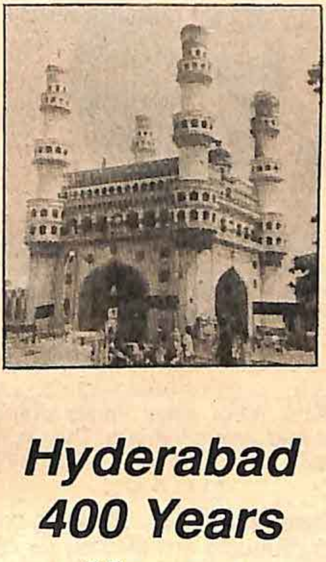
The temple of Sriramachandra at Bhadrachalam, the Mallikarjunaswàmi temple at Srisailam, the Ahobalam temple, Srikummam temple and the Simhachalam temple are among the other famous temples of Andhra Pradesh. The main tourist attraction is the capital of the state, *Hyderabad*. The capital is in reality the twin cities of Hyderabad and Secunderabad linked together by the Hussain Sagar. Places of interest are the Char Minar built in 1591, Osmania University, State Museum and Art Gallery, Salarjung Museum, Health Museum, Nehru Zoological Park, Public Gardens, Birla Mandir and Macca Masjid.

Another important centre of tourism is Golconda, about 8 km from Hyderabad. The capital of the Qutb Shahi Sultans in the 16th century, Golconda is rich in historical monuments which include the famous Golconda Fort. Golconda was known the world over, as a rich mine of diamonds in the mediaeval times. The famous diamonds, *Kohinoor* and *Pitt*, came from the diamond mines of Golconda.

Nagarjuna Sagar dam and the vicinity attracts large number of tourists. Yadagiri Gutta at Nalgonda, Vemulawada at Karimnagar and Ramappa and Thousand Pillars temple at Warrangal are also centres of attraction.

Governor: Krishan Kant; **Chief Minister:** N. Janardhana Reddy (Congress -I).

Hyderabad 400 Years Young



Hyderabad,the cosmopolitan metropolis of the South, celebrated its fourth centenary in 1991. Conceived as the capital of the burgeoning Golconda Kingdom by its ruler, Mohammad Quali Qutub Shah, the city's foundations were laid in 1590, and a year later the world renowned Charminar came into being. This historical edifice attracts travellers from far and wide who marvel at its architectural splendour.

Soon after it was founded, the city began to get filled with people belonging to many nationalities. People speaking different languages like Telugu, Arabic, Persian and Urdu rubbed shoulders in the bazars and streets giving birth to the cosmopolitan character of the city.

Mohammad Quali named the city Bhagnagar, after his beloved Bhagmati. The city was renamed 'Hyderabad' after the title Hyder Begum was conferred on her.

In the course of the last 400 years many historical landmarks added to the splendour of Hyderabad city. Here is found the Salarjung Museum, the largest one-man-collection of antiques and artefacts from all over the world. The renowned Mecca Masjid is located near Charminar.

The Qutub Shahi tombs located at a short distance from Golconda fort is the only place in India where the mortal remains of an entire dynasty lie together.

Secunderabad owes its origin to the British and was founded in 1806 during the rule of Secunder Jah.

Hyderabad, which became the capital of Andhra Pradesh in 1956, today continues to stand as a symbol of communal harmony and national integration. It is a bridge between the North and South of the country.

The city resounds with Telugu poetic recitations and Urdu Mushairas, the sound of machines in the large industries and the echoes of vendors' cries in the streets.

Many dream of the day when the wish of the city's founder is fulfilled that Hyderabad is "a city unique in the world and a replica of heaven on earth."

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Arunachal Pradesh

Area: 83,743 sq km. **Capital:** Itanagar. **Languages:** Monpa, Aka, Miji, Sherdukpen, Nishi, Apatani, Hill Miri, Tagin, Adi, Idu, Digaru, Miji, Khampti, Singpho, Tangsa, Nocte, Wancho. **Districts:** 11; **Population:** 858,392; **Males:** 461,242; **Females:** 397,150; **Increase (1981-'91):** 226,553; **Growth Rate (per cent) 1981-'91:** 35.86; **Density (persons per sq km.):** 10; **Sex Ratio (Females per 1000 Males) :** 861; **Literacy (per cent):** 41.22; **Males:** 51.10; **Females:** 29.37; **Per capita (1984-85):** Rs. 2,160.00.

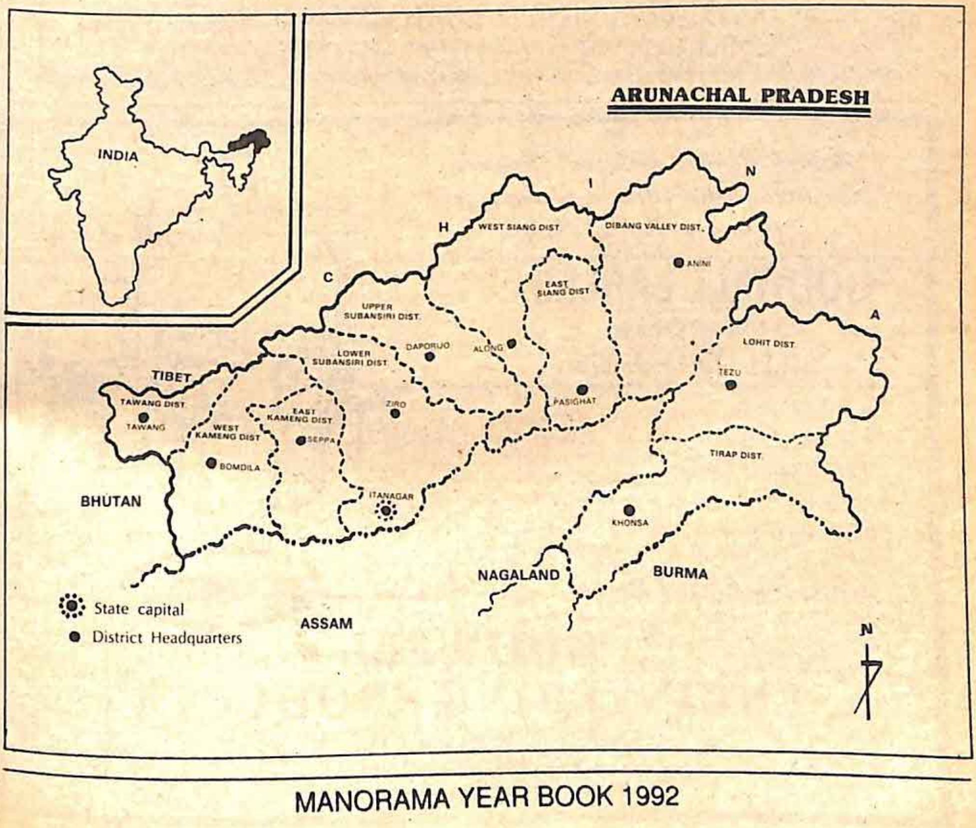
Arunachal Pradesh (Land of the Dawn-lit Mountains) is a thinly populated hilly tract on the eastern most part of India, surrounded on three sides by the international border with Bhutan to the west, China to the north and Burma to the east and Assam to the south.

Physiography: Arunachal is entirely mountainous except for thin strips of flat land most of which adjoin Assam. Dense forests cover more than two-thirds of the territory. The hydel potential is very high.

The population of Arunachal is predominantly tribal. All the tribes belong to Scheduled Tribes. According to the 1981 census, Scheduled Tribes

Districts

District	Population (1991) census)	Area (sq km)	Head-quarters
West Kameng	56,402	9,594	Bomdila
East Kameng	50,238	4,134	Seppa
Lower Subansiri	154,591	13,010	Ziro
Upper Subansiri	49,163	7,032	Daporijo
West Siang	89,778	12,006	Along
East Siang	99,985	6,512	Pasighat
Dibang Valley	42,928	13,029	Anini
Lohit	109,632	11,402	Tezu
Tirap	85,210	7,024	Khonsa
Tawang	27,574	NA	Tawang
Changlang	92,891	NA	Changlang
Total	858,392	83,743	



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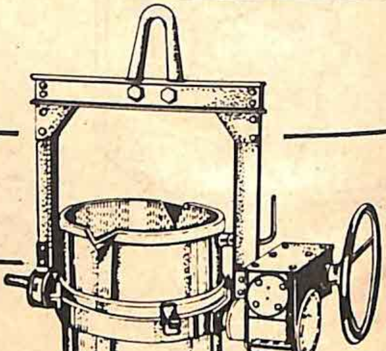

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formed 79 per cent of the population as against an average of 7 per cent for the whole of India. There are about 20 major tribes which are divided into a number of sub-tribes. The principal tribes are: Adi, Nishi, Apatani, Tagin, Mishmi, Khampti, Nocte, Wancho, Tangsha, Singpho, Monpa, Sherdukpen and Aka. These tribes speak their own tongues. These tribal people are colourful and hospitable and fond of music and dance.

History: Arunachal, originally known as the North East Frontier Agency (NEFA), was placed under the administration of the Union Government in 1948. It was declared a Union Territory under the name of Arunachal Pradesh on January 20, 1972. It became a full-fledged state of the Union on February 20, 1987.

Administration: On 15th August 1975, the Pradesh Council of Arunachal Pradesh was converted into a Legislative Assembly. A Council of Ministers was also constituted.

The territory is divided into 11 districts, each under a Deputy-Commissioner. Itanagar is the capital of the territory and is in Lower Subansiri district. The state is administered by a Governor.

State of Economy: Nearly 80 per cent of the population of Arunachal Pradesh is engaged in agriculture. The traditional method of agriculture is jhumming, a kind of shifting cultivation. The forests are cleared and crops are raised for one to three years, depending on the fertility of the soil. Thereafter the cultivators move on elsewhere. A determined effort is being made to wean the people from jhumming. The main crops are rice, maize, millet, wheat and mustard.

About 61,000 sq km of the territory is covered by forest, which has become an important source of revenue for the territory.

The territory has a bright prospect of forest-based industries. A remarkable number of medium and small scale industries including saw mills, plywood and veneer mills, rice mills, fruit preservation units, oil expellers, besides handloom and handicraft industries have been established.

Universities: Arunachal University, Itanagar.

Tourist Centres: Capital city of Itanagar with remnants of the Itafort, ancient Buddhist Monastery near Tawang, archaeological centres of Malinitan, Bismak Nagar and Nandapa Wildlife Sanctuary are of tourist interest.

Governor: Surendranath Dwivedy; **Chief Minister:** Gegong Apang (Congress-I).

Assam

Area: 78,438 sq km. **Capital:** Dispur. **Language:** Assamese. **Districts:** 23; **Population:** 22,294,562; **Males:** 11,579,693; **Females:** 10,714,869; **Increase (1981-'91)**; **Growth Rate (per cent) 1971-'91***: 52.44; **Density (persons per sq km.):** 284; **Sex Ratio (Females per 1000 Males):** 925; **Literacy:** 53.42; **Males:** 62.34; **Females:** 43.70. **Per capita:** Rs. 2,017.

Scholars are not agreed on the origin of the name "Assam". Some say that Assam is called so, because of its unequal terrain—that is, hills interspersed with valleys. They rely on a similar-sounding Sanskrit word, meaning 'unequal'. This explanation appears to be far-fetched. A more acceptable version is that Assam is only the anglicised version of 'Asom'—which was the name the Ahoms gave to the country, when they conquered it.

Physiography: Geographically Assam is a shadow of its former self. It has been reduced to one-third of its original size in thirty years' time.

In the partition of India (1947) Assam lost Sylhet district, except a major portion of Karimjang subdivision, to East Pakistan, now Bangladesh. Out of the 27 lakh population of Sylhet, Assam retained only 7 lakh, the rest going to Pakistan. Thereafter, Assam continued to lose territory and population step by step as Nagaland, Meghalaya, Mizoram and Arunachal Pradesh were separated from it.

Assam, as it is today, may be divided into two important physical regions—the Barak valley and the Brahmaputra valley.

Assam is dominated by the Brahmaputra river. The total length of the river from the source to the sea is 2900 km. Its drainage area is roughly 935,500 sq km.

Rainfall in Assam is one of the highest in the world. It varies between 178 and 305 cm. All this rainfall is concentrated in 4 months, June to September. The concentration of rainfall affects the state in two diametrically opposite ways, namely floods and droughts.

History: An ideal meeting ground for diverse races, Assam gave shelter to streams of human waves carrying with them distinct cultures and trends of civilization. Austro-Asiatics, Negritos, Dravidians, Alpines, Indo-Mongoloids, Tibeto-Burmese and Aryans penetrated into Assam through different routes and contributed in their own way towards the unique fusion of a new community which came to be known in later history as the Assamese. Assam, however, remained predominantly a land of the Tibeto-Burmese. The vast section of the people of Assam belong either to this stock or owe their origin to the fusion of this stock with other racial groups.

Assam, known in ancient lore as Kamarupa, originally included in addition to modern Assam, parts of modern Bengal and Bangladesh. Guwahati, the pulsating centre of Assam, is an ancient town whose history goes back to the puranic days. The city, anciently known as Pragjyotishpur, was said to have been founded by King Narakasur, who is

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* There was no census enumeration in Assam in 1981 due to disturbed conditions. Hence the growth rate is for two decades: 1971-1991.

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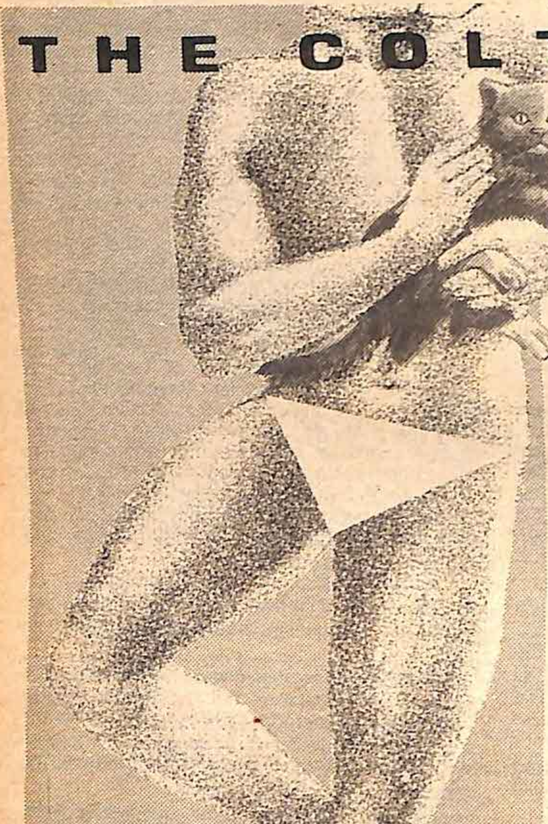

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mentioned in the puranas and epics. His son Bhagadatta led a large elephant force to the battlefield of Kurukshetra, and fell fighting on the side of the Kauravas.

In the 13th century, the country was conquered by the Ahoms under the leadership of Sukapha, a prince of the Shan tribe, in the upper Irravaddy Valley.

The advent of the Ahoms changed the course of Assam's history. Ahoms fought the local Karchari, Chutia and Moran kings and established their sway in course of time, over the whole of Brahmaputra Valley.

The Ahoms appointed Bharphakans (Viceroys) to rule Kamarupa and Gauhati became the capital of these Viceroys. The last of the Viceroys was Badanchandra, who in an ill-advised bid for power invited the Burmese to help him. The Burmese dislodged the Ahoms and dismissed their Viceroy, Badanchandra. The Ahoms appealed to the British for help.

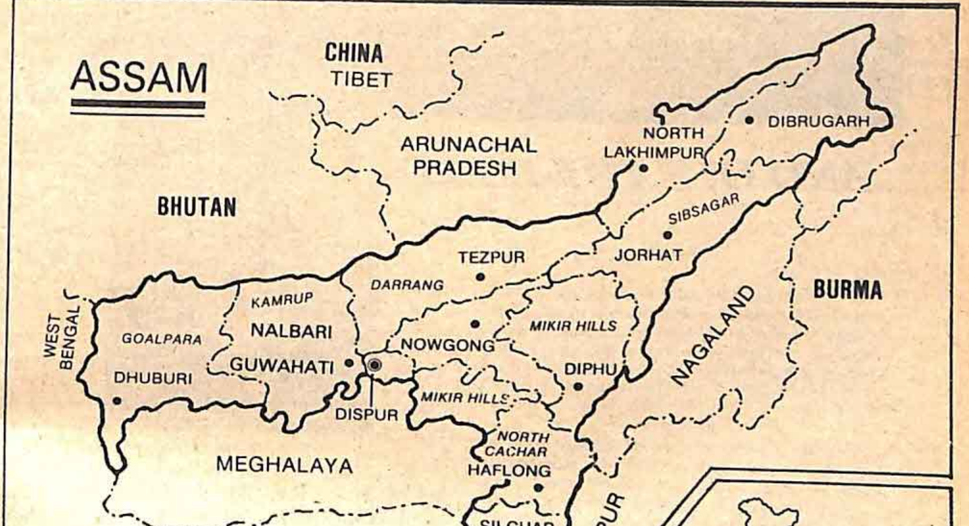
The British defeated the Burmese in several battles, in what has since been called the First Burmese War. With the Treaty of Yandabo in 1826, the Burmese vacated Assam, leaving the British in possession. The conquered territory was placed under the administration of an Agent to the Governor General. In 1832 Cachar was annexed to Assam. In 1835, the Jaintia Hills were made part of Assam. (Upper Assam was annexed to Bengal in 1839). In 1874 a separate province of Assam under a Chief Commissioner was created, with Shillong as capital.

On the partition of Bengal in 1905, Assam was united to the eastern districts of Bengal under a Lt. Governor. From 1912 the Chief Commissionership of Assam was revived, and in 1921 a Governorship was created.

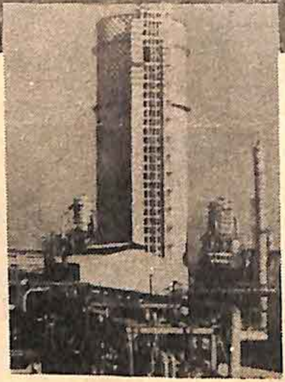
On the partition of India almost the whole of the predominantly Muslim district of Sylhet was merged with East Bengal (present Bangladesh). Dewanagiri in North Kamarupa was ceded to Bhutan in 1951.

Assam lost a good deal of its former territory, as a result of political changes, from time to time.

In 1948, the North East Frontier Agency was separated from Assam, for security reasons. In 1963, Nagaland was carved out of Assam as a full-fledged state. On 21st Jan. 1972, Meghalaya was cut out of Assam, as a separate state and Mizoram



CONSISTENT PERFORMANCE ON...



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became a Union Territory.

Administration: The Legislature consists of only one house—the Legislative Assembly.

The state is divided into 23 districts.

Districts

	Area in sq km	Population (1991)	Headquarters
Barpeta	3,307.3	1,382,715	Barpeta
Bongaigaon	–	806,472	Bongaigaon
Cachar	5,102.2	1,215,952	Silchar
Darrang	3,465.3	1,286,633	Mangaldoi
Dhemaji	–	472,183	Dhemaji
Dhubri	2,745.5	1,325,653	Dhubri
Dibrugarh	7,023.9	1,038,090	Dibrugarh
Goalpara	2,843.8	661,801	Goalpara
Golaghat	–	801,740	Golaghat
Hailakandi	–	448,506	Hailakandi
Jorhat	6,400.0	868,445	Jorhat
Kamrup	6,601.4	1,987,662	Guwahati
Karbi Anglog	10,332.0	655,415	Diphu
Karimganj	1,839.0	825,551	Karimganj
Kokrajhar	4,716.5	796,880	Kokrajhar
Lakhimpur	5,646.4	749,675	Lakhimpur
Marigaon	–	640,376	Marigaon
Nagaon	5,561.0	1,892,087	Nagaon
North Cachar Hills	4,890.0	149,346	Haflong
Nalbari	2,022.8	1,012,608	Nalbari
Sibsagar	2,602.9	895,112	Sibsagar
Sonitpur	5,225.2	1,418,484	Tezpur
Tinsukia	–	963,176	Tinsukia

State of Economy: Assam is rich in mineral wealth. It holds a unique position in the production of mineral oil. Other minerals found in the state are coal, limestone, refractory clay, dolomite and natural gas.

Of the agriculture-based industries, tea occupies an important place. There are nearly 750 tea plantations in the state. Petroleum and petroleum products amount to a large share of the country's total output of petroleum and natural gas. The state has two oil refineries and the third with a Petrochemical Complex is under way. There is also a public sector fertilizer factory at Namrup. Other industries are sugar, jute, silk, paper, plywood, rice and oil drilling. Important cottage industries are handloom, sericulture, manufacture of cane and bamboo articles, carpentry, smithy and manufacture of brass utensils. An export oriented handloom project has been started at Sualkuchi to exploit the export potentialities of Eri and Muga.

Universities: Assam Agl University, Jorhat; Dibrugarh University, Dibrugarh; Guwahati University, Guwahati.

Though an Act has been made to set up *Assam Central University* at Silchar, notification enforcing the Act is yet to be issued.

Tourist Centres: Guwahati-Kaziranga-Sibsagar and Guwahati-Manas are two travel circuits promoted by the Union Government. The following additional circuits have been proposed by the state.

1. Guwahati- Bhairabkunda- Orang- Bhaluking-Tezpur, 2. Guwahati-Diphu-Haflong-Silchar.

These circuits can be linked with Arunachal, Meghalaya, Manipur and Mizoram.

Kaziranga National Park is world famous for rhinos and elephants. Manas is another national park.

Foreigners visiting the state have to obtain restricted area permits from the Union Home Ministry.

The Asom Gana Parishad (AGP) ministry headed by P. K. Mahanta which ruled the state since December 1985 was dismissed and Assam was placed under President's rule on November 28, 1990.

Governor: Loknath Mishra; **Chief Minister:** Hiteshwar Saikiya.

Bihar

Area: 173,877 sq km; **Capital:** Patna; **Language:** Hindi; **Districts:** 42; **Population:** 86,338,853; **Males:** 45,147,280; **Females:** 41,191,573; **Increase (1981-'91):** 16,424,119; **Growth Rate (per cent) 1981-'91:** 23.49; **Density (persons per sq km.):** 497; **Sex Ratio (Females per 1000 Males):** 912; **Literacy:** 38.54; **Males:** 52,63; **Females:** 23.10. **per capita:** Rs. 1548.00.

The name 'Bihar' is a corrupt form of 'Vihara' which means a Buddhist monastery. Bihar, squeezed in between West Bengal, Orissa, MP and UP, reaches up to the Himalayas in the north and is completely landlocked. Bihar is bounded on the north by Nepal, on the south by Orissa, on the east by W. Bengal and on the west by MP and UP.

Physiography: Stretching from the Himalayan foothills in the north to Orissa in the south, Bihar suffers all the vicissitudes of changing seasons. It gets the worst of the cold and the worst of the heat and plenty of floods in the bargain.

The most striking geographical feature of Bihar is the sharp division between north and south. The northern portion is almost entirely a level tract, while the southern region is wooded and hilly. North Bihar is an extremely fertile strip of land, the land being watered by the rivers Sarayu, Gandak and Ganga.

Southern Bihar, especially in and around the districts of Chota Nagpur and Santhal Parganas, is thickly wooded and consists of a succession of hills. The elevation varies from 300 to 1300 m, the highest peak being 1372 m high.

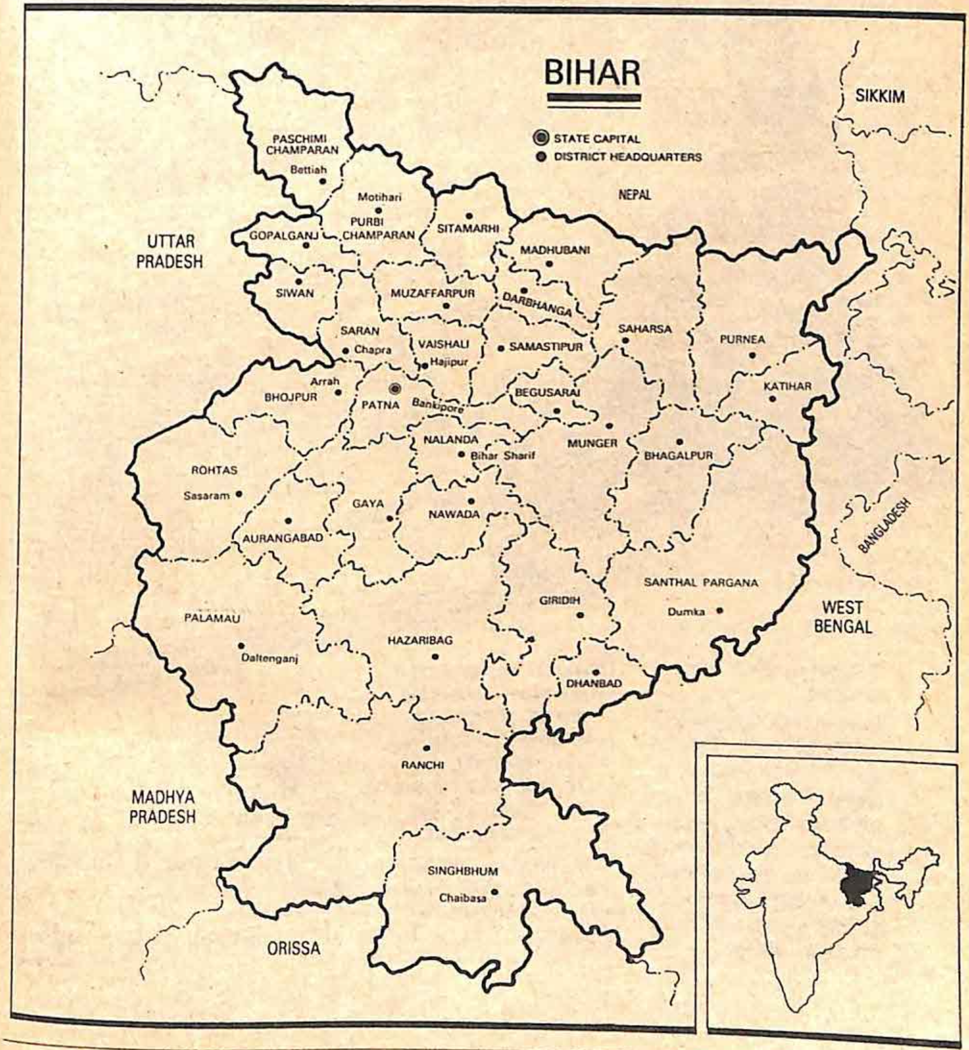
History: Bihar has a very ancient, glorious and colourful history. Bihar was the home state of the Mauryan emperors. Under Asoka the Great, Magadha and its capital Pataliputra became famous all over the world. With the death of Asoka, its fortunes declined. However, under the Gupta emperors it regained its lost glories. Under the Sultans of Delhi, and later under the Mogul emperors, Bihar was reduced to the status of a province, whose only importance was that it lay on the route from Bengal to Delhi.

When Sher Shah, a Behari himself, drove out Humayun and occupied the throne of Delhi, Bihar once again shot into limelight. Sher Shah founded the city of Patna, on the site of the ancient capital Pataliputra and gave the country an efficient administraton. Bihar enjoyed a period of peace and stability under Akbar the Great and later Moguls.

With the decline of the Mogul empire, Bihar passed into the hands of Nawabs of Bengal. The British wrested the country from the Nawab of Bengal, by the decisive battle at Buxar in Bihar (1764). Under the British Bihar was first a part of the Bengal Presidency. In 1911, Bihar along with Orissa, was separated from the Presidency of Bengal. In 1936, Bihar and Orissa became separate provinces.

Administration: Bihar is one of the medium-sized states of India being the ninth in area. But in population it is the second biggest state in India, next only to Uttar Pradesh.

The Legislative consists of two houses—the



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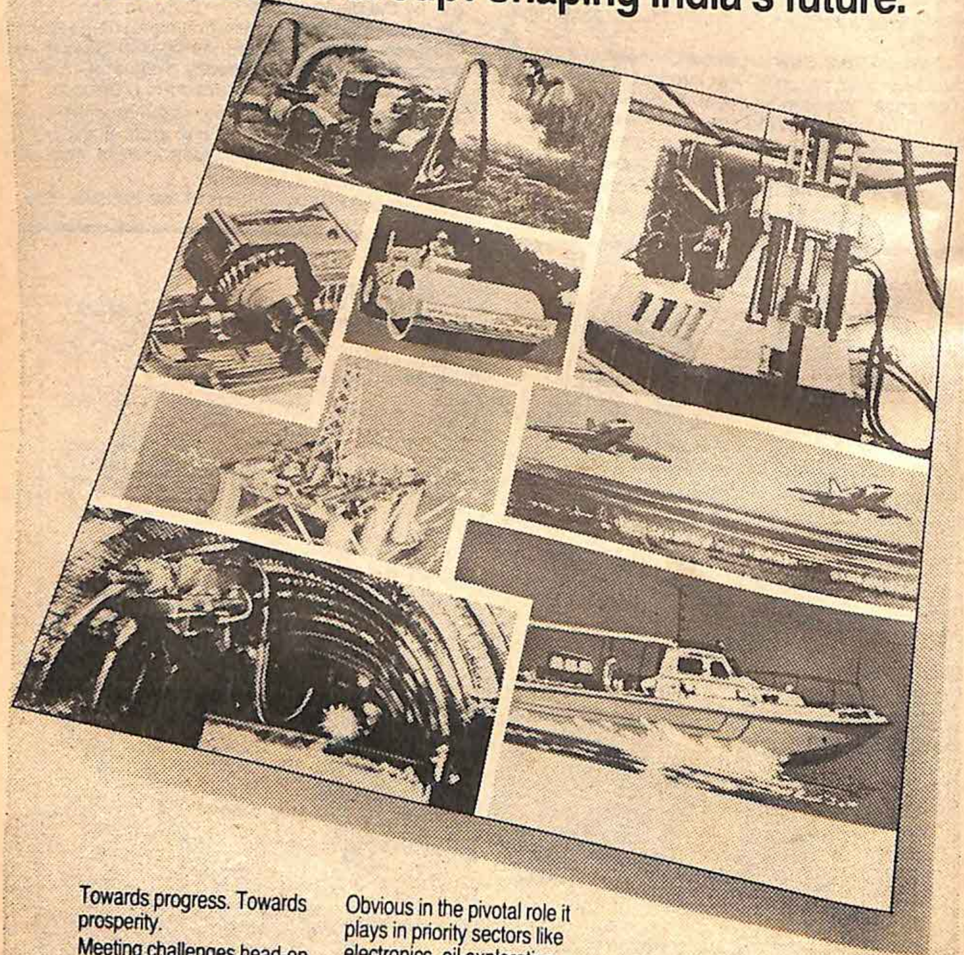

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Districts

District	Area in sq km	Population (1991)	Head quarters
Patna	3,202.0	3,623,225	Patna
Nalanda	2,367.0	2,003,313	Biharsharif
Nawada	2,494.0	1,358,433	Nawada
Gaya	6,545.0	2,665,217	Gaya
Aurangabad	3,305.0	1,537,946	Aurangabad
Rohtas	7,213.0	2,890,165	Sasaram
Bhojpur	4,098.0	2,867,318	Arrah
Saran	2,641.0	2,562,930	Chapra
Siwan	2,219.0	2,159,346	Siwan
Gopalganj	2,033.0	1,701,365	Gopalganj
Paschim Champaran	5.228.0	2,330,610	Bettiah
Purbi Champaran	3,968.0	3,042,303	Motihari
Sitamarhi	2,643.0	2,388,822	Sitamarhi
Muzaffarpur	3,172.0	2,946,601	Muzaffarpur
Vaishali	2,036.0	2,144,252	Hajipur
Begusarai	1,918.0	1,813,214	Begusarai
Samastipur	2,904.0	2,715,297	Samastipur
Darbhanga	2,279.0	2,509,083	Darbhanga
Madhubani	3,501.0	2,828,640	Madhubani
Saharsa	4,071.8	2,514,751	Saharsa
Madhepura	1,788.5	1,178,060	Madhepura
Purnia	7,943.0	1,876,287	Purnia
Katihar	3,057.0	1,821,590	Katihar
Munger	6,398.7	3,055,135	Monghyr
Khagaria	1,485.8	986,731	Khagaria
Bhagalpur	5,589.0	3,198,471	Bhagalpur
Deoghar	2,478.6	918,323	Deoghar
Godda	2,110.4	858,678	Godda
Sahebganj	3,405.4	1,297,391	Sahebganj
Dhanbad	2,996.0	2,709,170	Dhanbad
Giridih	6,892.0	2,224,006	Giridih
Hazaribagh	11,165.0	2,838,836	Hazaribagh
Palamu	12,749.0	2,451,048	Daltonganj
Ranchi	7,574.1	2,205,034	Ranchi
Gumla	9,077.1	1,153,557	Gumla
Lohardaga	1,490.9	288,585	Lohardaga
Jahanabad	1,569.30	1,173,071	Jhanabad
Dumka	–	1,497,266	Dumka
Purbi Singhbhum	–	1,617,170	Chaipasa
Pashchimi Singhbhum	–	1,789,796	Chaipasa
Araria	–	1,611,145	Araria
Kishanganj	–	986,672	Kishanganj

Legislative Assembly and the Legislative Council. The state is divided into 42 districts.

State of Economy: Bihar is ideally suited for agriculture. It has 115 lakh hectares cultivated land out of a total of 174 lakh ha. Presently only 85 lakh hectares of land are being cultivated. The principal foodgrain crops are rice, wheat, maize and pulses. Main cash crops are sugarcane, oilseeds, tobacco, jute and potato. Forest covers about 19 per cent of the total area. Important forest products are timber, kendu leaves, lac, gum and sal seed. Bihar Forest Development Corporation collects seeds like Mahua, Karanj and Kusum.

In minerals Bihar is the richest state in India, accounting for nearly 40% of India's total production. Industries based on iron ore, coal, etc, are spread out around Jamshedpur, Bokaro, etc.

The Bihar State Industrial Development Corporation's new coming projects are Sponge Iron at Chandi, G.I. Sheets at Jamui, Nylon in Bhojpur, Solvent extraction plant at Latehar, Watch factory at Ranchi, Cement Plant at Patratu, Transmission Tower at Jasidhi, Bihar Fasteners at Gaya, etc. During 1985-86, 10,212 small scale industrial units were registered.

Universities: Bhagalpur University, Bhagalpur; Bihar University, Muzaffarpur; Birla Institute of Tech., Mesra; Birsa Agl University, Ranchi; Kameshwarsingh Sanskrit University, Darbhanga; Lalit Narain Mithila University, Darbhanga; Magadh University, Bodhgaya; Nalanda Open University, Nalanda; Patna University, Patna; Rajeendra Agl University, Pusa, Samasthipur; Ranchi University, Ranchi.

Tourist Centres: Rajigir, Bodh Gaya, Jamshedpur, Bokaro, Nalanda, Patna, Ranchi, Sasaram, Vaishali, Hazaribagh, Betla, Bhimbandh, etc. Bodh Gaya, near Gaya in Bihar, is a Budhdhist centre of pilgrimage. It contains the famous ancient temple near the Bodhi Tree under which Buddha got enlightenment.

Jamshedpur and Bokaro are steel towns. Nalanda was one of the great seats of learning in ancient India and contains the ruins of many Buddhist temples and monasteries.

Patna, capital of Bihar, stands on the site of the ancient city of Pataliputra.

Sasaram is famous on account of the magnificent tomb of Sher Shah Suri, Emperor of Delhi.

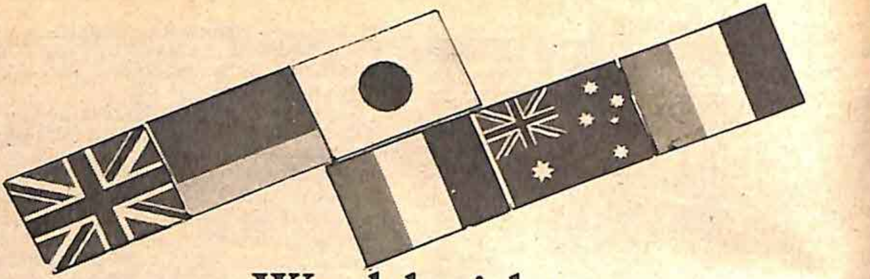
Hazaribagh and Betla have national parks and wild life sanctuaries. Vaishali was the seat of ancient Lichavi Republic.

Governor: Mohammed Shafi Qureshi; **Chief Minister:** Lalu Prasad Yadav (Janata Dal).

GOA

Area: 3659.7 sq.km.; **Capital:** Panaji; **Languages:** Konkani and Marathi; **Districts:** 2; **Population:** 1,168,622; **Males:** 593,563; **Females:** 575,059; **Increase (1981-91):** 160,873; **Growth Rate (per cent) 1981-91:** 15.96; **Density (persons per sq. km.):** 316; **Sex Ratio (females per 1,000 males):** 969; **Literacy:** 76.96; **Males:** 85.48; **Females:** 68.20; **Per captia:** Rs. 6939.

Goa is the smallest state of the Indian Union. It was part of the Union Territory of Goa, Daman, and Diu. It became the twentyfifth state in the Indian



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Union on May 30th 1987 while Daman and Diu remained a Union Territory, administered by the Governor of Goa who simultaneously holds office as the Lt. Governor of Daman and Diu also. Since their liberation on December 19, 1961 from the Portuguese colonial rule, the three land blocks on the west coast of India, were under one administration.

Physiography: Situated between Karnataka and Maharashtra, Goa is bounded on the north by the Terekhol river, surrounded on the south and east by Karnataka while on the west is the Arabian Sea. On its eastern sector Goa's terrain is hilly, forming the northern edge of the Sahyadri mountain ranges. The major west-flowing rivers that crease the territory are: Mandovi, Zuari, Terekhol, Chapora and Betul. The total navigable length of these rivers, which form the waterways by which Goa's main export commodity iron and manganese ore is transported to the Mormugao harbour, is 253 km. The Mormugao harbour is virtually the confluence of the Mandovi and Zuari rivers.

Goa's climate is warm and humid, with little variation in temperature. The annual rainfall is between 2300 mm and 4800 mm.

History: Goa has been a very important historical and cultural centre since the earliest times. It was known as Gopakpattan or Gomant which figure in the Bhishma - Parva of the Mahabharatha. It was also mentioned as Govapuri in the Suta-Samhita. Ptolemy, the great geographer (2nd century A.D.) refers in his geography to Goa as "Gouba". Later on, during Kadamba times it was also known as Gopapuram or Gove.

The earliest known history of the territory which included the adjoining lands of the neighbouring states, can be traced back from the Mauryas. Goa was under the Satavahanas from 2nd century B.C. and thereafter, under the sway of the western Kshatrapas from 150 A.D.

Chalukyas of Badami ruled over it for over 2000 years since 540 A.D. After the fall of Badami Chalukyas, Rastrakutas dominated the area including Goa for over 220 years from 753 A.D. to 973 A.D.

Kadambas of Goa replaced them and put it under their sway from 1008 A.D. to 1300 A.D. when Goa turned out to be a great centre of maritime trade. Thereafter, Goa came under the control of Yadavas of Devagiri, Delhi Sultans (1356 to 1378 A.D.), Vijayanagar Rulers (1378 to 1470 A.D.), Bahamani Sultans of Deccan and later on Adilshahis of Bijapur (1470 to 1510 A.D.).

In 1534, Diu off the southeast coast of Kathiawar (Gujarat) was occupied by the Portuguese. In 1559, Daman on the Gujarat coast, 70 miles from Bombay, was annexed by them. Inquisition which was established in Goa, largely contributed to the downfall of the Portuguese empire in the East.

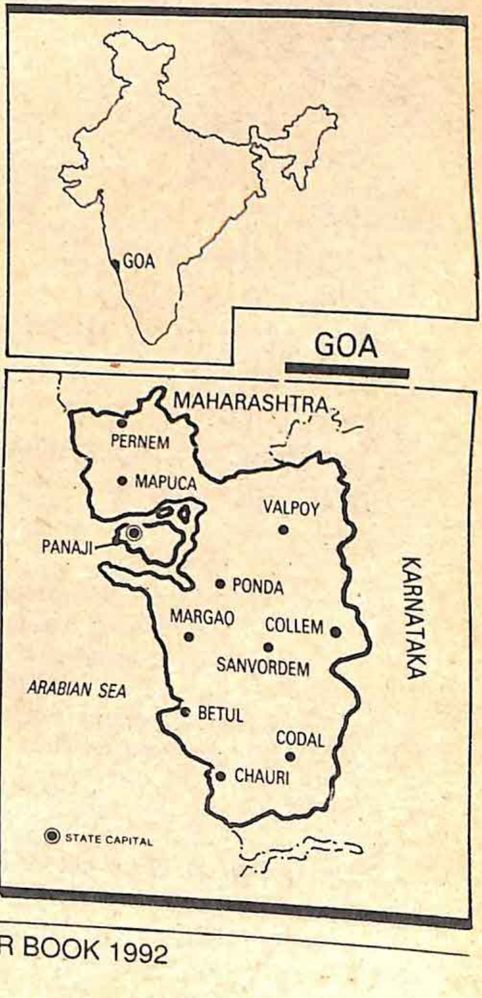
It continued till 1812 with a brief break of four years from 1774. The Portuguese made the city of Panaji the capital of Goa in 1843. The Portuguese territory of Goa, Daman and Diu was finally liberated on December 19, 1961.

Under the Constitution (Twelfth Amendment) Act 1962, Goa was included in the first schedule to the Constitution as a territory of the Indian Union.

In 1966 Parliament enacted the Goa, Daman and Diu Opinion Poll Act. In accordance with the provisions of the Act, an opinion poll was held in January 1967 to ascertain whether Goa, Daman and Diu wanted to be a Union Territory or to merge with the adjoining states of Maharashtra and Gujarat. Goa, Daman and Diu voted to continue as a Union Territory.

Goa attained full statehood on 30th May 1987 when Daman and Diu retained separate identity as a Union Territory.

Administration: The legislature consists of one house, the Legislative Assembly. Total seats: 40.



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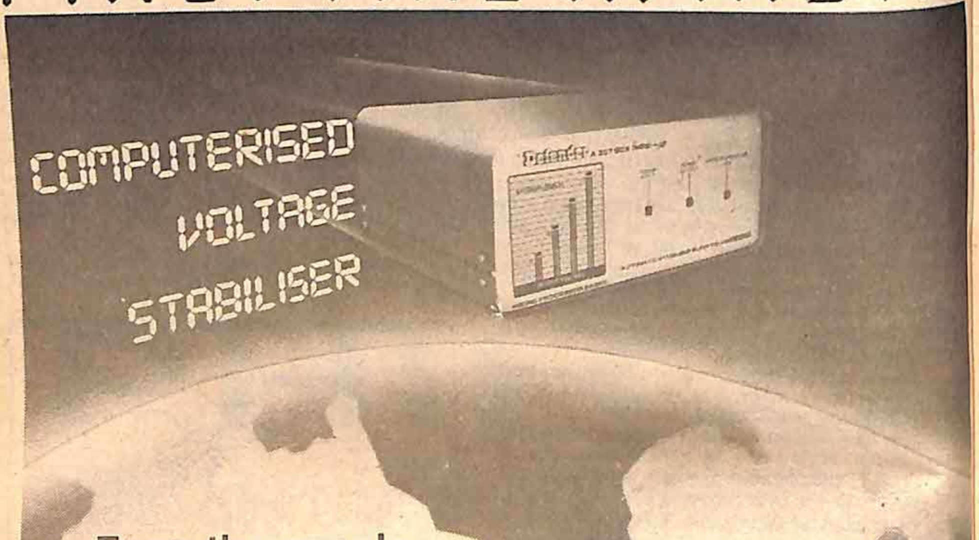

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The state is divided into two districts, North Goa and South Goa.

State of Economy: Essentially export-oriented because of iron ore and manganese deposits, Goa is making a determined bid to stand on its own. Paddy is the main agricultural crop, followed by ragi, cashew and coconut. Rice is the staple food of Goans. Rice production, 52,000 tonnes at the time of liberation, has gone up to 1.62 lakh tonnes. Fish, like rice, is an important component of the Goans' food. A 105 km long coastline, four thousand hectares of marshy land 12,000 hectares of paddy land and 100 hectares of fresh water sources provide ideal setting for a flourishing trade. Annual fish catch is around 50,784 tonnes (1989). A fleet of 1551 trawlers and 2450 country craft are engaged in fishing which sustains a work force of 40,000 people.

Districts

District	Area sq km	Population 1991	Head-quarters
North Goa	1713.6	6,63,773	Panaji
South Goa	1946.7	5,04,849	Margao

Iron ore exports aggregated to 124.16 lakh tonnes, main buyer being Japan. There are 42 large industrial units, eleven medium-scale units and 4552 small scale units (1989). Annual growth rate of Goa during 25 years since liberation is estimated at six per cent.

Universities: Goa University. Taleigao, Plateau.

Tourist Centres: Tourism is a major industry in Goa. On an average a million people, including 1.25 lakh foreigners visit Goa. Dabolim airport, near the port town of Vasco-da-Gama, is equipped to receive chartered flights. The territory is known for its numerous beaches such as Calangute, Colva and Vagator.

Famous tourist spots: Old Goa has the Basilica of Bom Jesus, where the casket containing the incorruptible body of St. Francis Xavier, the Apostle of Goa is housed. Other famous shrines are the Se Cathedral and the Assissi Church. A few km away is Ponda, where the Mangueshi Siva Temple, the Santha Durga Temple and the Nagueshi Temple are situated. Dona Paula, overlooking the confluence of the Mandovi river, (in Panaji), the Aravelam waterfalls, the Mayem lake, the Dudsagar waterfalls, the Bondla sanctuary, the Mormugao harbour and the Aguada Fort are some of the other tourist attractions.

Governor: Bhanu Prakash Singh; **Chief Minister:** Ravi Naik (Cong.-I).

Gujarat

Area: 196,024 sq km. **Capital:** Gandhinagar. **Language:** Gujarati. **Districts:** 19; **Population:** 41,174,060; **Males:** 21,272,388; **Females:** 19,901,672; **Increase (1981-'91):** 7,088,261; **Growth Rate (per cent) 1981-'91:** 20.80; **Density (persons per sq km.):** 210; **Sex Ratio (Females per 1,00 Males):**936; **Literacy:** 60.91; **Males:** 72.54; **Females:** 48.50; **Per capita:** Rs. 2,772.00.

Gujarat, lying in the north-west corner of India, is the tenth in point of population (1981). It is bounded on the north-west by Pakistan, on the north by Rajasthan, on the east by MP and on the south and south-east by Maharashtra.

Physiography: The State of Gujarat occupies the northern extremity of the western seaboard of India. The state comprises three geographical regions. (1) The peninsula, traditionally known as Saurashtra. It is essentially a hilly tract sprinkled with low mountains. (2) Kutch on the north-east is barren and rocky and contains the famous Ranns (desert) of Kutch, the big Rann in the north and the little Rann in the east. (3) The mainland extending from the Rann of Kutch and the Aravalli Hills to the river Damanganga is on the whole a level plain of alluvial soil.

The plains of Gujarat are watered by big rivers like Sabarmati, Mahi, Narmada, and Tapti and by smaller rivers like Banas, Saraswathi and Damanganga. The rainfall in the state, except in the arid zones of Surendranagar and north Gujarat, varies between 65 and 127 cm.

As the Tropic of Cancer passes through the northern border of Gujarat, the state has an intensely hot or cold climate. But the Arabian sea and the Gulf of Cambay in the west and the forest-covered hills in the east soften the rigours of climatic extremes.

History: On May 1, 1960, as a result of the Bombay Reorganization Act, 1960, the State of Gujarat was formed from the north and west (predominantly Gujarati speaking) portions of Bombay State, the remainder being renamed the State of Maharashtra.

Gujarat consists of the following districts of the former State of Bombay: Banas Kantha, Mehsana, Sabar Kantha, Ahmedabad, Kaira, Pancha Mahals, Vadodara, Bharuch, Surat, Dangs, Amreli, Surendranagar, Rajkot, Jamnagar, Junagadh, Bhavnagar, Kachchh, Gandhinagar and Bulsar.

Administration: Gujarat has a unicameral legislature, the Legislative Assembly, which has 182 elected members. The state is divided into 19 districts.

Districts

District	Area (sq km)	Population (1991)	Head quarters
Ahmedabad	8,707	4,788,820	Ahmedabad
Amreli	6,760	1,251,454	Amreli
Banaskantha	12,703	2,158,378	Palanpur
Bharuch	9,038	1,542,696	Bharuch
Bhavnagar	11,155	2,287,751	Bhavnagar
Gandhinagar	649	393,475	Gandhinagar
Jamnagar	14,125	1,545,188	Jamnagar
Junagadh	10,607	2,392,372	Junagadh
Kheda	7,194	3,437,487	Kheda
Kutch	45,652	1,245,967	Bhuj

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Mahesana	9,027	2,929,153	Mahesana
Panchmahals	8,866	2,948,489	Godhra
Rajkot	11,203	2,509,142	Rajkot
Sabarkantha	7,390	1,758,036	Himatnagar
Surat	7,657	3,391,202	Surat
Surendranagar	10,489	1,204,611	Surendranagar
Dangs	1,764	143,490	Ahwa
Vadodara	7,794	3,073,357	Vadodara
Valsad	5,244	2,172,992	Valsad

State of Economy: Gujarat ranks first in the country in the production of cotton and groundnut and second in the production of tobacco.

Cotton and groundnut have found good markets and provide a foundation for important industries like textiles, oil and soap. Other important cash crops are isabgul, cumin, sugarcane, mangoes and bananas. The chief food crops of the state are paddy, wheat and bajra. Jowar and maize are produced in local areas.

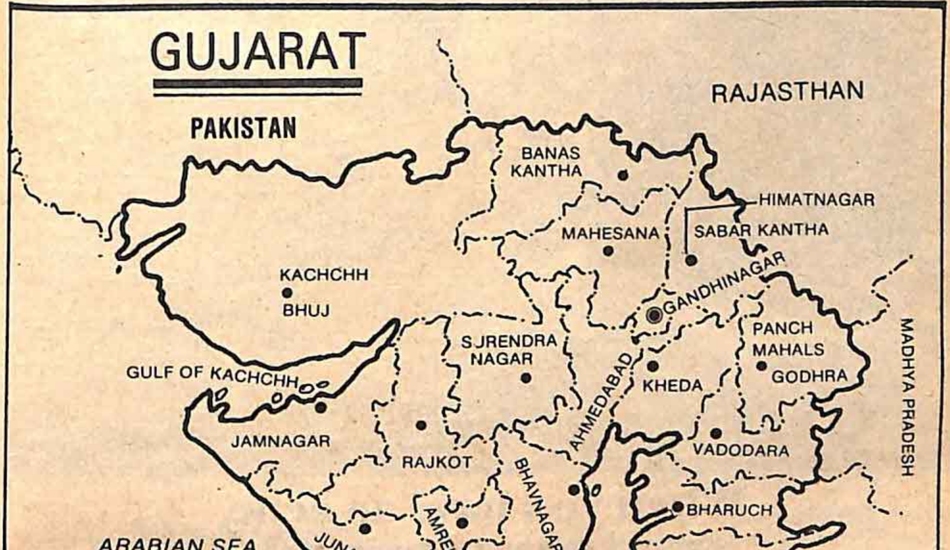
Gujarat has 19.66 lakh hectares of land under forest.

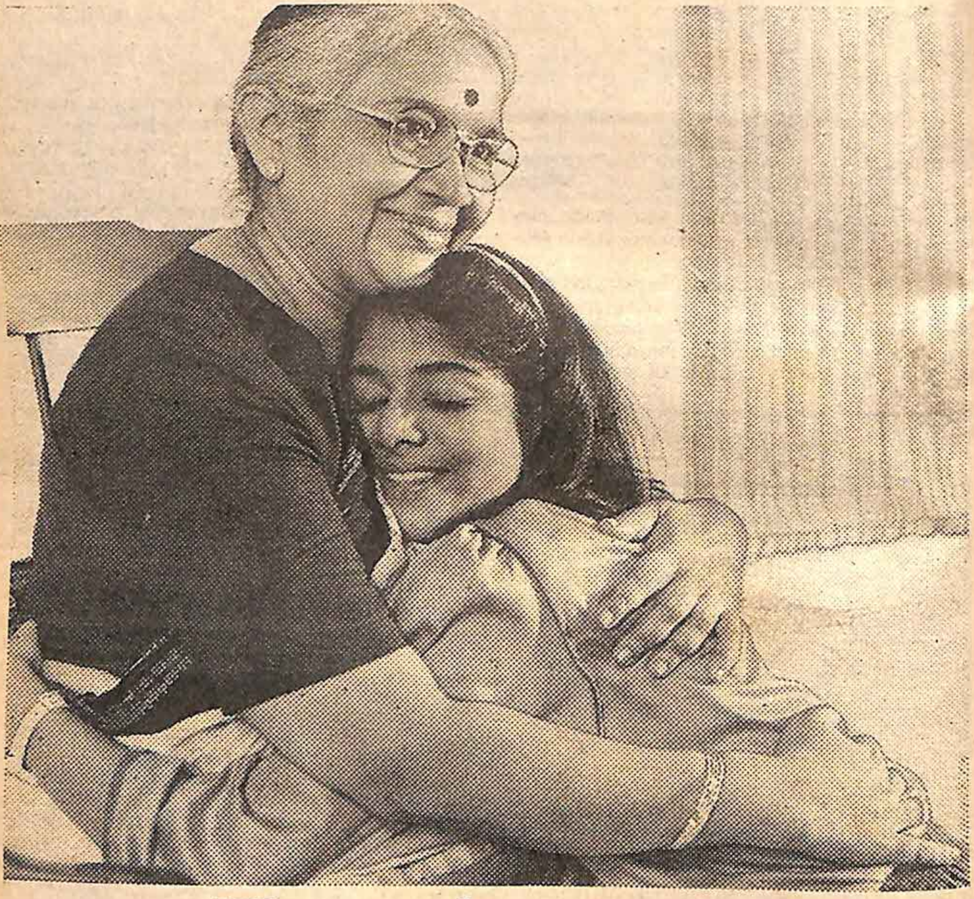
Gujarat has a dominant electronics industry. New industries, which are coming up, are chemicals, petrochemicals, fertilizers, drugs and pharmaceuticals, dye-stuffs and engineering units of multiple types.

The state is a major producer of inorganic chemicals such as soda-ash and caustic soda as well as chemical fertilizers. It has the largest petrochemical complex in the country.

The dairy industry has made tremendous advance and the state accounts for nearly 63 per cent of infant milk produced in the country.

Exploration and production of oil and natural





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gas in Ankleshwar, Cambay and Kalol and oil refinery at Koyali are other industrial achievements. Near Bharuch Gujarat Narmada Valley Fertilizer Company has achieved great success. Ankleshwar industrial estate is humming with a number of industries. On the coastal areas of Saurashtra ship-breaking yards have taken shape at Alang and Sachana. Jamnagar, Porbander, Jafrabad, Bhavnagar, etc. are busy with new industries, trade and business.

Gujarat is a major salt-producing state and its production forms as much as 60 per cent of the country's output.

Gujarat has now more than 70,000 small-scale units and 13,000 factories including 1328 textile factories. There are about 167 Industrial Estates in the State.

Universities: M.S. University, Baroda; Bhavnagar University, Bhavnagar; Gujarat Agl. University, Dantiwada; Gujarat Ayurveda University, Jamnagar; Gujarat University, Ahmedabad; Gujarat Vidyapith, Ahmedabad; North Gujarat University, Patan; Sardar Patel University, Vallabh Vidyanagar; Saurashtra University, Rajkot; South Gujarat University, Surat.

Tourist Centres: Gujarat has 4 national parks and 11 sanctuaries. The game sanctuary at Gir, the sacred temples of Dwaraka and Somanath, Palitana, the picturesque mountain city of Jain Temples on about 2000 feet high Shetrunjaya hills, Udwada, the oldest place of the Fire temple of Parsees in India, the 5000-year-old archaeological finds at Lothal, the 11th century Sun Temples at Modhera, bird sanctuary at Nal Sarovar, architectural monuments of Indo-Saracenic style at Ahmedabad and other places, the national shrine of Mahatma Gandhi at Sabarmati Ashram, Ahmedabad, Saputara hills in South Gujarat are just a few of the varied attractions in the state.

Governor: Dr. Swaroop Singh; **Chief Minister:** Chiman Bhai Patel (Janata Dal).

Haryana

Area: 44,212 sq km; **Capital:** Chandigarh; **Language:** Hindi; **Districts:** 16; **Population:** 16,317,715; **Males:** 8,705,379; **Females:** 7,612,336; **Increase (1981-91):** 3,395,596; **Growth Rate (per cent) 1981-91:** 26.28; **Density (persons per sq. km.):** 369; **Sex Ratio (females per 1,000 males) :** 874; **Literacy:** 55.33; **Males:** 67.85; **Females:** 40.94; **Per capita:** Rs. 3,669.00.

The state is bounded by UP in the east, Punjab in the west, Himachal Pradesh in the north and Rajasthan in the south. The Union Territory of Delhi juts into Haryana and is encompassed by it on three sides.

Physiography: Haryana can be divided into two natural areas, sub-Himalayan terrain and the Indo-Gangetic plain. The plain is fertile and slopes from north to south with a height above the sea level averaging between 700 and 900 ft. The south west of Haryana is dry, sandy and barren. Haryana has no perennial rivers like its parent state Punjab or its eastern neighbour UP. In this respect, it has more affinity to its southern neighbour, Rajasthan. The only river which flows through Haryana is the Ghaggar, which passes through the northern fringes of the state. This river identified by some historians as the river Drishavaditi of Vedic fame is not perennial. Rainfall is meagre, particularly in the districts of Mahendragarh and Hissar.

For most of the year, the climate of Haryana is of a pronounced character, very hot in summer and markedly cold in winter. The maximum temperature is recorded in the months of May and June when it goes upto as high as 46 degrees C. The temperature falls to the lowest in January.

There are two well-marked seasons of rainfall in the State: (i) the monsoon period falling from the middle of June till September on which autumn crops and spring sowing depend, and (ii) the winter rains which occur from December to February. The Dec.-Feb. rains, though often insignificant in quantity, yet materially affect the prosperity of the spring harvest.

History: Haryana has a proud history going back to the Vedic age. The state was the home of the legendary Bharata dynasty, which has given the name Bharat to India. Haryana is immortalised in the great epic *Mahabharata*. Kurukshetra, the scene of the epic battle between the Kauravas and the Pandavas, is situated in Haryana. The state continued to play a leading part in the history of India till the advent of the Muslims and the rise of Delhi as the imperial capital of India. Thereafter, Haryana has functioned as an adjunct to Delhi and practically remained anonymous till the first war of Indian independence in 1857 when the people of Haryana joined the leaders of the Indian revolt against the British Government.

When the rebellion was crushed and the British administration was reestablished, the Nawabs of Jhajjar and Bahdurgarh, the Raja of Ballabhgarh and Rao Tula Ram of Rewari of the Haryana region were deprived of their territories. Their territories were either merged with the British territories or handed over to the rulers of Patiala, Nabha and Jind. Haryana thus became a part of the Punjab province.

The modern State of Haryana came into being on November 1, 1966 as a result of the re-organization of the old Punjab State into two separate states. It was formed as a linguistic state, on the pattern of other states in India, the Hindi-speaking areas of Punjab having been assigned to it.

Administration: The legislature consists of only one house—the Legislative Assembly. There are 90 members in the Legislative Assembly (Vidhan Sabha).

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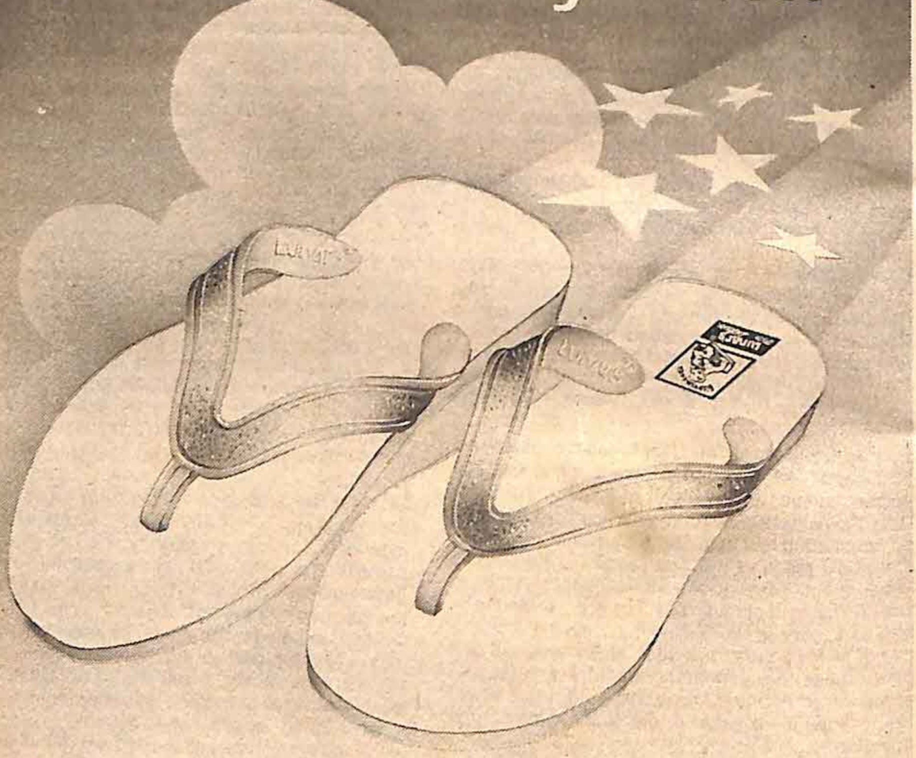

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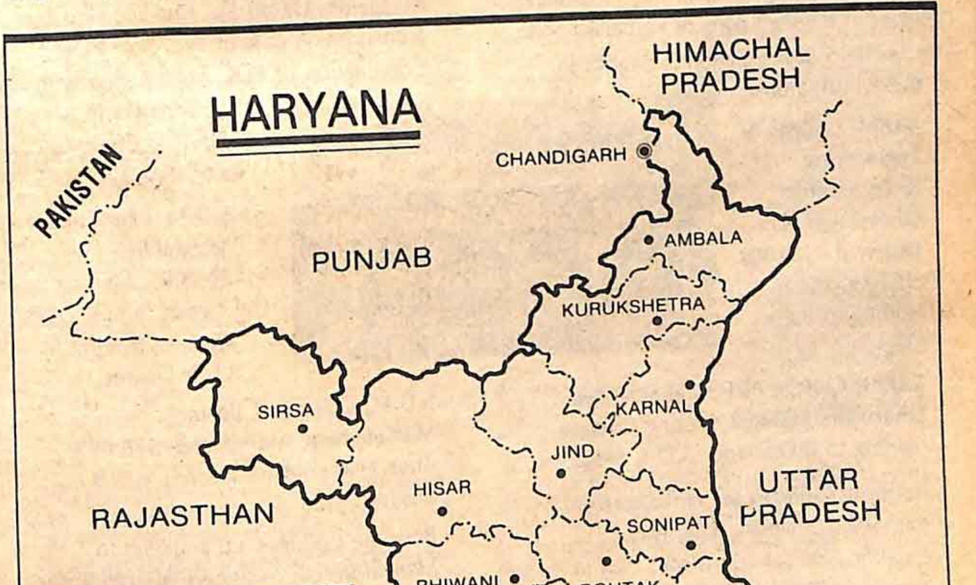
The state is divided into 16 districts (including 4 announced in 1989).

Districts

District	Area sq km	Population '91	Headquarters
Ambala	3,832	1,106,275	Ambala
Kurukshetra	3,740	635,658	Kurukshetra
Karnal	3,721	880,213	Karnal
Jind	3,306	958,165	Jind
Sonepat	2,206	744,450	Sonepat
Rohtak	3,841	1,780,166	Rohtak
Faridabad	2,150	1,466,393	Faridabad
Gurgaon	2,716	1,128,905	Gurgaon
Mahendragarh	3,010	665,416	Narnaul
Bhiwani	5,099	1,122,487	Bhiwani
Hissar	6,315	1,835,555	Hissar
Sirsa	4,276	902,082	Sirsa
Rewari	–	623,443	Rewari
Kaithal	–	818,352	Kaithal
Panipat	–	831,754	Panipat
Yamunanagar	–	818,401	Yamunanagar

Universities: Maharshi Dayanand University, Rohtak; Kurukshetra University, Kurukshetra; Haryana Agl University, Hissar; National Dairy Research Inst., Karnal.

State of Economy: Agricultural development in Haryana has been tremendous since independence. The production of foodgrains, sugarcane (gur),



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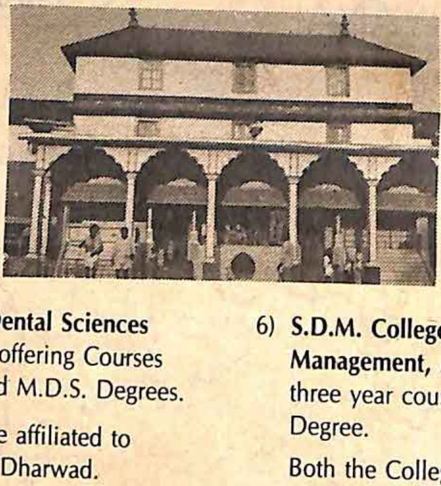

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oilseeds and cotton rose from 25.92 lakh tonnes, 5.10 lakh tonnes, 0.92 lakh tonnes and 3.05 lakh bales of 170 kg each in 1966-67 to 66.59 lakh tonnes, 6 lakh tonnes, 1.50 lakh tonnes and 5.50 lakh bales of 170 kg each respectively in 1982-83. Fertilizer consumption increased from 0.13 tonnes in 1966-67 to 2.72 lakh tonnes in 1982-83.

Haryana was the first state to introduce crop insurance scheme in north India. Dairy industry is also highly developed.

The major industries are cement, sugar, paper, cotton, textiles, glassware, brassware, cycles, tractors, motor cycles, timepieces, automobile tyres and tubes, sanitaryware, television sets, steel tubes, hand tools, cotton yarn, refrigerators, vanaspati, ghee and canvas shoes. A factory of the Hindustan Machine Tools producing tractors is located at Pinjore.

In all, in Haryana there are at present more than 42,000 small scale industrial units as well as 308 large and medium scale units. Exports rose to Rs. 150 crore in 1982-83.

Tourist Centres: Raj Hans, Badkhal Lake, Surajkund, Dabchik, Sultanpur, Barbet, Sohna and Pinjore. Haryana has a network of 32 tourist complexes.

The Golden Triangle of India—Delhi-Agra-Jaipur, and other places of tourist interest in the north viz. the Kashmir Valley, Simla, Amritsar, Chandigarh and Bhakra-Nangal Dam hold great charm for potential tourists, both foreign and home. Haryana girdles Delhi from three sides with all the national highways to these tourist centres running through it.

'Hotel Raj Hans' stands above Surajkund and overlooks the Peacock Lake and bestows its comforts to foreign and domestic tourists coming to Delhi or Haryana.

Haryana Tourism has repeatedly won awards from the Pacific Area Travel Association and the Travel Agents Association of India.

Governor: Dhanik Lal Mandal; **Chief Minister:** Bhajan Lal (Congress-I).

Himachal Pradesh

Area: 55,673 sq km; **Capital:** Shimla; **Languages:** Hindi and Pahari; **Districts:** 12; **Population:** 5,111,079; **Males:** 2,560,894; **Females:** 2,550,185; **Increase (1981-91):** 830,261; **Growth Rate (per cent) 1981-91:** 19.39; **Density (Persons per sq. km.):** 92; **Sex Ratio (females per 1000 males) :** 996; **Literacy:** 63.54; **Males:** 74.57; **Females:** 52.46. **Per capita:** Rs. 2,542.00.

Physiography: Himachal Pradesh is situated in the north west corner of India, right in the lap of the Himalayan ranges. It is surrounded by Jammu and Kashmir in the north, Uttar Pradesh in the south east, Haryana in the south and Punjab in the west, in the east, it forms India's boundary with Tibet.

The state is almost entirely mountainous with altitudes ranging from 460 to 6600 metres above sea level. It has a deeply dissected topography, a complex geological structure and a rich temperate flora in sub-tropical latitudes.

Physiographically, the state can be divided into two regions, southern and northern. The southern part of Himachal Pradesh is almost as hot as the plains, while the northern region has a temperate summer and a winter with extreme cold and heavy snowfall. The districts of Shimla and Sirmaur have alluvial soil, while the remaining ten districts have forest and hill soils. The normal rainfall of Himachal Pradesh is 181.6 cm. Maximum rainfall is noticed at Dharmasala in Kangra district.

Himachal Pradesh is drained by a number of rivers, the most important of which are Chenab, Ravi, Beas, Sutlej and Yamuna. All these rivers are snow-fed and hence perennial. Besides, the natural reservoirs and the large drops available in the river courses provide immense potential for hydel power generation at low cost.

History: Himachal Pradesh was originally formed as a centrally-administered territory on April 15, 1948 by the integration of some thirty and odd Punjab hill states. In 1951, it became a 'Part C' state under a Lt. Governor, with a Legislative Assembly of 36 members and a Cabinet of three ministers. In 1954, Bilaspur, another 'Part C' state was merged with Himachal Pradesh and the strength of the Assembly was raised to 41 members.

In 1956, the States Re-organization Commission recommended the merger of Himachal Pradesh with Punjab. But the people of Himachal Pradesh so stoutly opposed the merger that it was not put into effect.

Till October, 1966 Himachal Pradesh consisted of only six hill districts—Mahasu, Mandi, Chamba, Sirmaur, Bilaspur and Kinnaur. In November, 1966, it was enlarged by the addition of some of the hilly areas of Punjab—Shimla, Kangra, Kulu, Lahaul and Spiti districts and the Nalagarh tehsil of Ambala district and areas of Hoshiarpur and Gurdaspur districts.

Himachal Pradesh was re-organized into 10 districts and declared a state on January 25, 1971 with Shimla as its capital. In 1972-73, the districts were reshuffled bringing up their number to 12.

Administration: There is only one house of legislature, i.e., Vidhan Sabha, with 68 members.

The state is divided into the following 12 districts.

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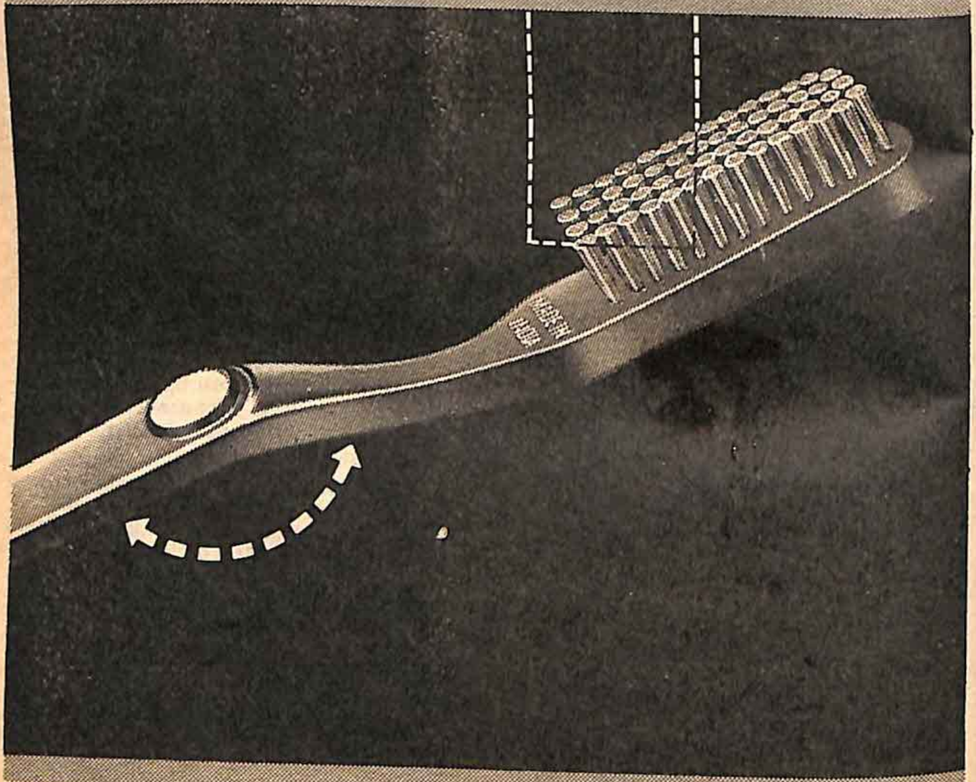

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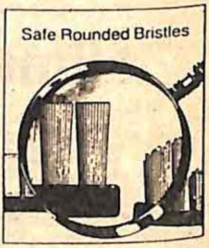

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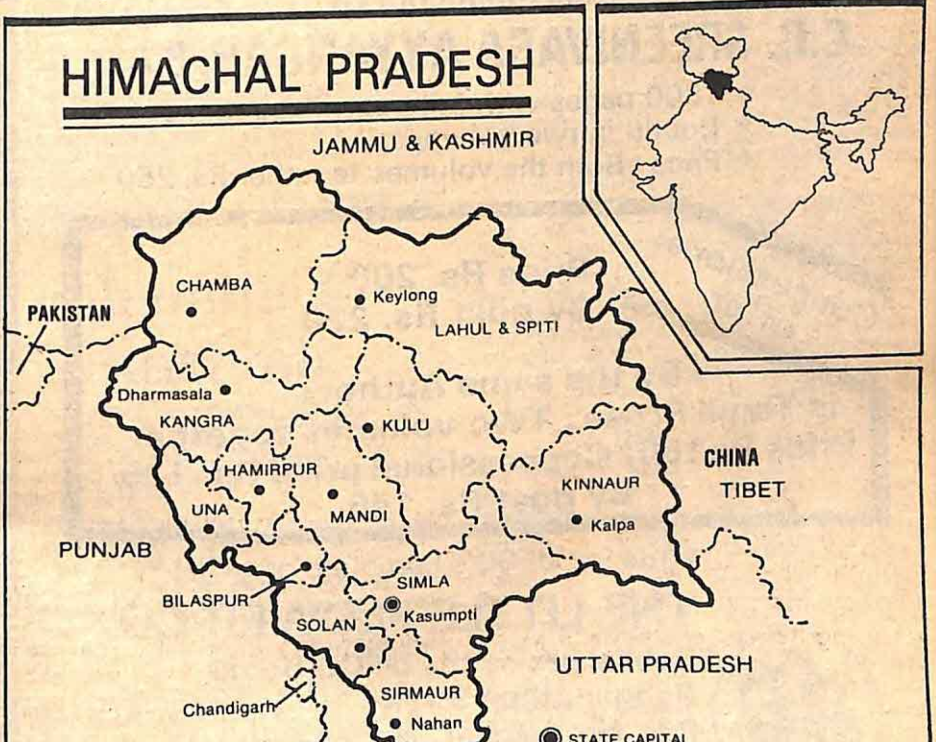
Districts

District	Area sq km	Population 1991	Head-quarters
Bilaspur	1,167	291,388	Bilaspur
Chamba	6,528	391,047	Chamba
Hamirpur	1,118	359,322	Hamirpur
Kangra	5,739	1,149,744	Kangra
Kinnaur	6,401	70,931	Kinnaur
Kulu	5,503	301,729	Kulu
Lahaul & Spiti	13,835	30,820	Lahaul & Spiti
Mandi	3,950	768,446	Mandi
Shimla	5,131	614,892	Shimla
Sirmaur	2,825	378,801	Simaur
Solan	1,936	379,320	Solan
Una	1,540	374,639	Una

State of Economy: Agriculture and horticulture are the mainstay of Himachal's economy as 71 per cent of people are engaged in these pursuits. Irrigated area forms 26 per cent of the net area sown. However, the agroclimatic conditions in the state are more suitable for growing a wide variety of fruits and cash crops like seed potatoes, ginger, vegetable seeds, apples, stone fruits, etc. Wheat, maize and paddy are the major cereal crops under cultivation. The production of food grains during 1988-89 was about 13.40 lakh tonnes as against 7.01 lakh tonnes during 1966-67 when the state was reorganized.

The state continues to be industrially backward despite vast natural resources endowment and plentiful availability of cheap hydel power. A 1500 MV Nathpa Jhakri hydro electric project is coming up. At the end of 1988-89, there were about 18,500 small scale industrial units in organized sector employing about 72,445 persons besides numerous cottage and village industrial units. The commissioning of the most modern and sophisticated fruit processing plant in Parwanoo with a capital outlay of



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Universities: Dr. Y. S. Parmar University of Horticulture & Forestry, Solan; H.P. University, Shimla; H. Pradesh Krishi Vishwa Vidyalay, Palampur.

Tourist Centres: Himachal Pradesh is studded with a number of hill stations which are refreshingly cool in summer. They offer to the tourists a quick holiday amidst breath-taking scenery. Shimla, Dalhousie, Dharmasala, Kulu, Kasauli, Solan, Chail and Kufri are some of the famous hill stations.

Himachal Pradesh abounds in wild life among which are some rare species like musk deer, ibex, thar, Himalayan brown bear and snow leopard among animals and monal, tragopan, kokiash and snowcocks among birds. The rivers offer ideal fishing grounds for trout in Katrain, Rohru and Barot and for masheer in Maryoga, Karganuand and Dedahu.

Governor: Virendra Varma; **Chief Minister:** Shanta Kumar (BJP).

Jammu & Kashmir

Area: 222,236 sq km; **Capital:** Srinagar (Summer) Jammu (Winter); Dist. 14. (omission). **Population:** 7,718,700* **Languages:** Urdu, Kashmiri, Dogri, Ladakhi, etc.; **Literacy:** 26.17%; **Per capita:** Rs. 2173.00.

Religious population (1981): Hindus - 1,930,448; Muslims - 3,843,451; Christians - 8,481; Sikhs - 133,675; Buddhists - 69,706.

Physiography: The state lies in the extreme north of the country and is bounded on the north by China, on the east by Tibet and on the south by Himachal Pradesh, Punjab and Pakistan. The official language is Urdu.

History: The State of Jammu and Kashmir which had earlier been under Hindu rulers and Muslim sultans, became part of the Mugal Empire under Akbar. After a period of Afghan rule from 1756, it was annexed to the Sikh kingdom of the Punjab in 1819. In 1846 Ranjit Singh made over the territory of Jammu to Maharaja Gulab Singh. After the decisive battle of Sabroon in 1846 Kashmir also was made over to Maharaja Gulab Singh under the Treaty of Amritsar. British supremacy was recognised until the Indian Independence Act 1947.

When all the states decided on accession to India or Pakistan, Kashmir asked for stand-still agreements with both. In the meantime, the state became the subject of an armed attack from Pakistan and Maharaja acceded to India on 26th October, 1947 by signing the instruments of accession. India approached the U.N. in January, 1949. Another round of war between the two countries in 1965 was followed by the Tashkent Declaration in January 1966.

Following the liberation movement in the former eastern wing of Pakistan, Pakistan attacked India in December, 1971. It was followed by the Shimla Agreement in July, 1972. A new line of control was delineated bilaterally to replace the cease-fire line between the two countries in Jammu and Kashmir.

The Maharaja's son Yuvraj Karan Singh took over as Regent in 1950 and on the ending of hereditary rule (17th October, 1952) was sworn in as a Sadar-i-Riyasat. On his father's death (26th April, 1961) Yuvraj Karan Singh was recognized as Maharaja by the Indian Government. He decided, however, not to use the title.

Administration: The Constitution of the state came into force in part on 17th November, 1956 and fully on 26th January, 1957. The constitution provides for a bicameral Legislature— (i) the Legislative Assembly (ii) the Legislative Council.

The State comprises 14 districts, of which 6 each fall in Jammu and Kashmir provinces and two in Ladakh region.

Districts

District	Area (sq km)	Population '81	Headquarters
Anantnag	3,984	656,351	Anantnag
Badgam	1,371	367,262	Badgam
Baramula	4,588	670,142	Baramula
Doda	11,691	425,262	Doda
Jammu	3,097	943,395	Jammu
Kargil	14,036	65,992	Kargil
Kathua	2,651	369,123	Kathua
Kupwara	2,379	328,743	Kupwara
Ladakh	82,665*	68,380	Leh
Pulwama	1,398	404,078	Pulwama
Poonch	1,674	224,197	Poonch
Rajauri	2,630	302,500	Rajauri
Srinagar	2,228	708,328	Srinagar
Udhampur	4,550	453,636	Udhampur

* Includes 37,555 sq km under illegal occupation by China.

State of Economy: Agriculture is the mainstay of

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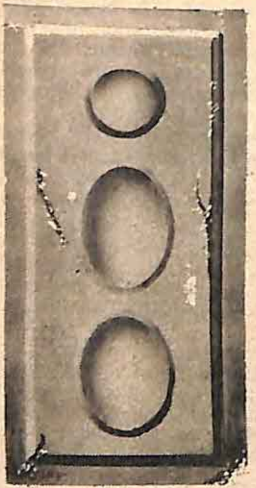
* This is a projected figure as the 1991 census operation has not yet been conducted in the state.



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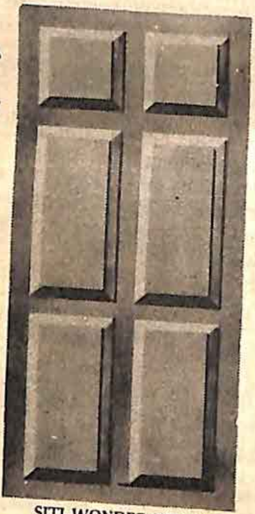

SITI WONDER WOOD

SUITABILITY INDICES OF
RUBBER WOOD (TEAK = 100)

PROPERTY	SUITABILITY INDEX
WEIGHT	93
STRENGTH AS A BEAM	62
STIFFNESS AS A BEAM	77
SHOCK RESISTING ABILITY .	75
SHEAR	92
SURFACE HARDNESS	74
SPLITTING COEFFICIENT ...	75
NAIL HOLDING CAPACITY	105

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the State's economy, as about 80 per cent of the population depend on it. Paddy, wheat and maize are the major crops. Barley, bajra and jowar are cultivated in some parts. Gram is grown in Ladakh.

Area targeted to be covered under high-yielding varieties in 1988-89 is 2.88 lakh hectares under paddy, 2.063 lakh hectares under wheat, and about 2.01 lakh hectares under maize. Food grains production is expected to reach 15.98 lakh tonnes in 1987-88 from 14.43 lakh tonnes in 1986-87.

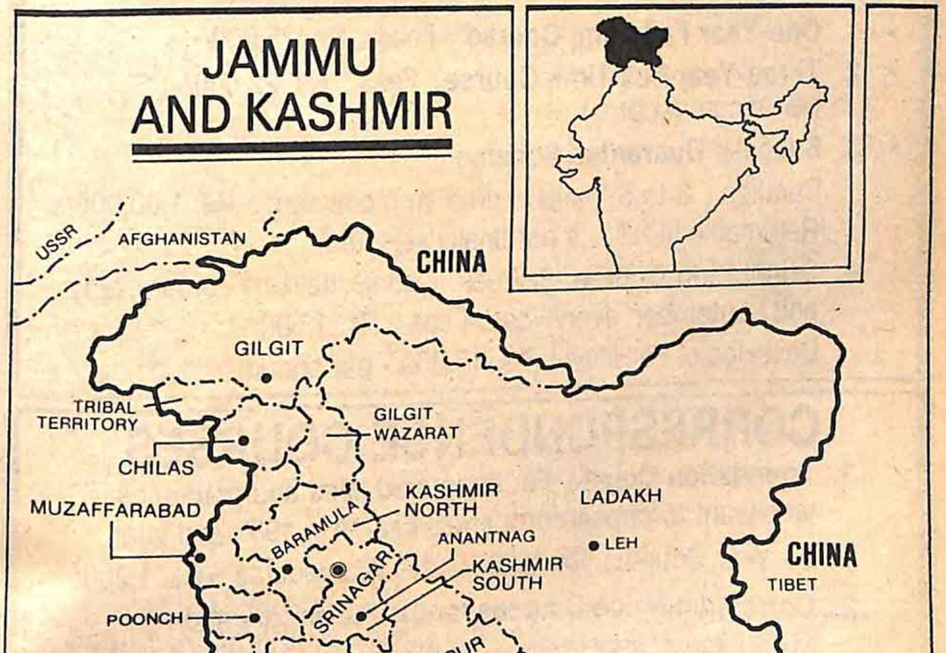
In the small scale sector (upto the end of March 1987) the number of industrial units registered had crossed the 21.22 thousand mark providing employment to about 94,000 people.

The State Government accords high priority to the development of handicrafts and handlooms sectors. Kashmir handicrafts have always been a byword for excellence. The tradition of crafting papier mache, wood carving, carpet and shawl making, etc. is very old in Kashmir. This sector provides employment to about 1,90 lakh people. Kashmir handicrafts particularly carpets earn substantial foreign exchange for the country. In 1985-86 Kashmir handicrafts worth Rs. 40.00 crore were exported.

Universities: University of Jammu, Jammu; University of Kashmir, Srinagar; Sher-e-Kashmir University of Agl. Sciences & Tech., Srinagar.

Tourist Centres: Kashmir is the paradise for tourists both international and domestic. Main centres of attraction are Srinagar, Pahalgam, Gulmarg, Sonamarg, etc. Among places of pilgrim interest are Amarnath and Vaishno Devi.

The tourist industry in the state has registered a phenomenal growth during the past decade. Dur-



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Ad-Art

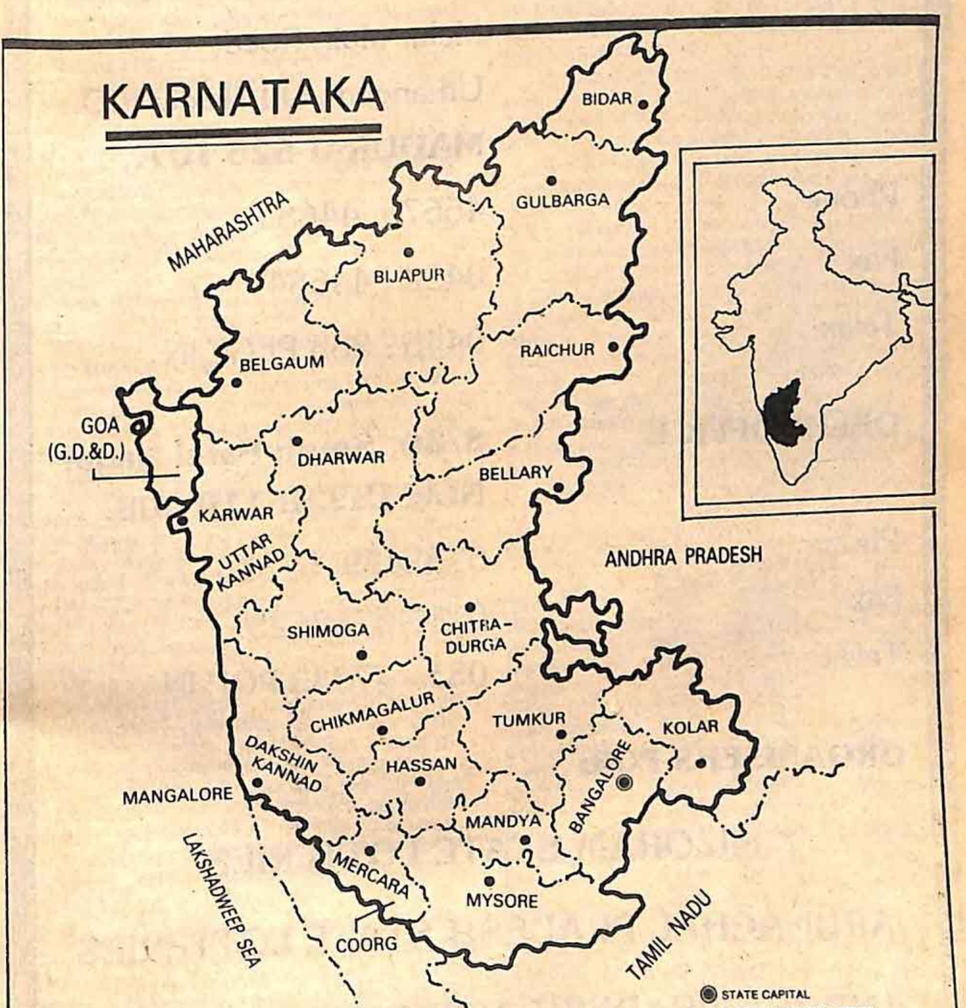
ing 1975-76, over Rs. 60 lakh were spent on this sector and in 1986-87 plan expenditure was about 7.50 lakh. In the Seventh Plan an outlay of Rs. 2250 crore was approved. A record number of 7.20 lakh tourists visited the state in 1987.

The state has been under Governor's rule from January 19, 1990 and under President's rule since July, 19, 1990.

Governor: Girish Chandra Saxena.

Karnataka

Area: 191,791 sq km; **Capital:** Bangalore; **Language:** Kannada; **Districts:** 20; **Population:** 44,817,398; **Males:** 22,861,409; **Females:** 21,955,989; **Increase (1981-91):** 7,681,584; **Growth Rate (per cent) 1981-91:** 20.69; **Density (persons per sq. km.):** 234; **Sex Ratio (females per 1000 males):** 960; **Literacy:** 55.98%;



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Males: 67.25; **Females:** 44.34; **Per capita:** Rs. 2136.00.

Karnataka is the eighth largest state in India both in area and population. It was formerly known as Mysore. On November 1, 1973 the name *Mysore* was changed to *Karnataka* under The Mysore State (Alteration of Name) Act 1973.

The change is much more than a change in nomenclature. It is the revival of a great image of the region which, under the name of Karnataka, had attained glorious heights in history.

Physiography: Karnataka is situated on the western edge of the Deccan plateau and has for its neighbours Maharashtra and Goa on the north, Andhra Pradesh on the east and T. Nadu and Kerala on the south. On the west, it opens out on the Arabian Sea.

Physiographically, the state can be divided into four regions: (1) The Coastal Region. (2) the Malnad, (3) the Northern plains and (4) the Southern plains.

The two important river systems of Karnataka State are the Krishna and its tributaries (Bhima, Ghataprabha, Malaprabha, Tungabhardra and Vedavati) in the north, and the Cauvery and its tributaries (Hemavati, Shimsha, Arkavati, Lakshmana Thirtha and Kabini) in the south.

Both these rivers flow eastward and fall into the Bay of Bengal, the Krishna passing through Andhra Pradesh and the Cauvery traversing Tamil Nadu.

A number of smaller rivers flow westward into the Arabian Sea. Of these Sharavati, Kalinadi and Netravati are important to Karnataka. They are being tapped for hydro-electric power.

History: The name Karnataka is derived from Karunadu, literally, lofty land. As much of Karnataka is high plateau land, the name is entirely justified. The history of Karnataka goes back to the dim days of the epics. The capital of Bali and Sugreeva, 'monkey kings' of the Ramayana, is said to have been Hampi in Bellary district. Vatapi, associated with the Sage Agastya, is obviously Badami in Bijapur district.

In the 4th century B.C. Karnataka was part of the great Mauryan Empire. Siwamagiri (Kanakagiri in Raichur district) is said to have been the southern capital of the Mauryas. About 30 B.C. a local dynasty, Satavahana, came to power. The Satavahana Empire lasted nearly 300 years. With the disintegration of the Satavahana dynasy, the Kadambas came to power in the north, and the Gangas in the south. The gigantic monolithic statue of Gomateswara at Sravanabelagola is considered to be a monument of the Ganga period.

By the beginning of the sixth century A.D., the Chalukyas established a new empire. After the Chalukyan empire, the Yadavas of Devagiri and the Hoysalas of Dwarasamudra divided Karnataka between them.

In the 14th century, the great Vijayanagar empire was established. It was an age of glory and prosperity. A confederation of the Muslim sultans of the Deccan destroyed the Vijayanagar Empire in 1565 (Battle of Talikota). The vast ruins at Hampi, near Hospet, remain to-day as sombre reminders of Vijayangar glory.

In 1399 A.D. Yaduraya, the ruler of a small principality, Mysore, founded the Wodeyar dynasty. Raja Wodeyar (A.D. 1578–1612) enlarged the principality into a mighty kingdom, with Srirangapatanam as his capital. The Wodeyars were overthrown by Hyder Ali, the intrepid Muslim general of Mysore. With the defat of Tippu, the son of Hyder Ali, by the British, the Wodeyars were restored to power as a feudatory of the British.

During British rule, the Karnataka area was distributed among the Princely States of Mysore, Hyderabad, and the British provinces of Bombay and Madras and the small principality of Coorg.

The formation of the present State represented the fulfilment of the age- old aspirations of Kannada-speaking people to come together in a single state. The old Kingdom of Mysore formed the nucleus of the new state. Under the States Reorganization Act, the Kingdom of Mysore gathered around the districts of Kanara, Bijapur, Dharwar and the major portion of Belgaum district in the Gulbarga, Raichur and Bidar districts, from the princely State of Hyderabad, Dakshina Kannada district (excluding Kasargod Taluk) from the old Madras Presidency and the whole of the 'Part C' State of Coorg.

Administration: The Legislature is made up of two houses, the Legislative Assembly of 224 members and the Legislative Council of 75 members.

The state is divided into 20 districts.

Districts

District	Area in (sq km)	Population '91	Head quarters
Bangalore	8005	4823951	Bangalore
Bangalore Rural	3814	1665468	Bangalore
Belgaum	13415	3520406	Belgaum
Bellary	9885	1892715	Bellary
Bijapur	17069	2914667	Bijapur
Bidar	5448	1251060	Bidar
Chickmagalur	7201	1016839	Chickmagalur
Chitradurga	10852	2177638	Chitradurga
Dakshina Kannada	8441	2692081	Mangalore
Dharwad	13738	3498814	Dharwar
Gulbarga	16224	2573900	Gulbarga
Hassan	6814	1566412	Hassan
Kodagu	4102	485229	Madikeri
Kolar	8223	2211304	Kolar
Mandya	4961	1643626	Mandya
Mysore	11954	3155995	Mysore
Raichur	14017	2307049	Raichur
Shimoga	10553	1900429	Shimoga
Tumkur	10598	2301448	Tumkur
Uttara Kannada	10291	1218367	Karwar

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State of Economy: Karnataka is predominantly rural and agrarian. About 76 per cent of its population lives in rural areas while about 71 per cent of its working force is engaged in agriculture and allied activities which generate 49 percent of the state income.

Among the agriculture crops, Karnataka accounts for 59% of the country's coffee production and 47 per cent of the country's ragi production. The production of other crops (tonnes): rice: 2173, jowar: 1845, ragi: 1470, millet: 364, tur: 192, ground nut: 673, sesame: 34, oil seeds: 1074.

There are a number of big industries. Machine tools, aircraft, electronic products, watches and telecommunication equipment are some of the items produced. Important Union Government undertakings engaged in the production of these items are Hindustan Aeronautics, Hindustan Machine Tools, Bharat Earth Movers, Bharat Electronics, Indian Telephone Industries and National Aeronautical Laboratory. The state-owned Viswesvaraya Iron & Steel Ltd., Bhadravathi, produces special steel and alloy steel.

Kudremukh Iron Ore Project is another major development project. Karnataka accounts for 85 per cent (467 tonnes) of the raw silk produced in the country. Apart from silk, its sandal soap and sandal oil are well known in world markets. The third naval base in India with an outlay of Rs. 2000 crore is being set up at Karwar.

Universities: Bangalore University, Bangalore; Gulbarga University, Gulbarga; Indian Inst. of Science, Bangalore; Karnataka University, Darwad; Kuvempu University, Shimoga; Mangalore University, Mangalore; University of Mysore, Mysore; University of Agl. Sciences, Hebbal; University of Agl. Sciences, Dharwad. A Sanskrit University named after Rajiv Gandhi is proposed to be set up at Sringeri.

Tourist Centres: Garden city of Bangalore has been adjudged the cleanest city in India more than once. A trip from Bangalore to Mysore, the capital of the Wodeyars via Srirangapatnam, the capital of Tippu Sultan, is quite rewarding.

Mysore city is famous for the Dasara festival during September–October. The famous Krishnaraja Sagar dam and Brindavan gardens are nearby.

Among the natural parks is Bandipur Wild life Sanctuary, 80 km south of Mysore. Belur, on the bank of river Yagachi, was once the flourishing capital of Hoysala Empire. Sravanabelagola where the 18-metre statue of Gomateswara stands is a Jain pilgrim centre. Gerusoppa (Jog Falls) is world famous.

Governor: Khurshid Alam Khan. **Chief Minister:** S. Bangarappa (Congress-I)

Kerala

Area: 38,863 sq km; **Capital:** Thiruvananthapuram; **Language:** Malayalam; **Districts:** 14; **Population:** 29,011,237; **Males:** 14,218,167; **Females:** 14,793,070; **Increase (1981-91):** 3,557,557; **Growth Rate (per cent) 1981-91:** 13.98; **Density (persons per sq. km.):** 747; **Sex Ratio (females per 1000 males):** 1040; **Literacy:** 90.59%; **Males:** 94.45; **Females:** 86.93; **Per capita:** 2140.00.

Kerala is a small state, tucked away in the south west corner of India. It has an area of 38,863 sq km which represents only 1.18 per cent of the total area of India. But it supports a population of 29,011,237 which is 3.43 per cent of the total population of the country (1991). The disproportion between its area and population is reflected in the density—which in 1991 was 747 persons to the sq km. This is the second highest density among the states of the Union, higher density being registered only by the state of West Bengal - 766.

Physiography: Kerala may be divided into three geographical regions: (1) Highlands, (2) Midlands and (3) Lowlands. The Highlands slope down from the Western Ghats which rise to an average height of 900 m, with a number of peaks well over 1,800 m in height. This is the area of major plantations like tea, coffee, rubber, cardamom and other spices.

The Midlands, lying between the mountains and the lowlands, is made up of undulating hills and valleys. This is an area of intensive cultivation. Cashew, coconut, arecanut, tapioca, banana, rice, ginger, pepper, sugar-cane and vegetables of different varieties are grown in this area.

The Lowlands or the coastal area, which is made up of the river deltas, backwaters and the shore of the Arabian sea, is essentially a land of coconuts and rice. Fisheries and coir industry constitute the major industries of this area.

Kerala is a land of rivers and backwaters. Forty-four rivers (41 west-flowing and 3 east-flowing) cut across Kerala with their innumerable tributaries and branches, but these rivers are comparatively small and being entirely monsoon-fed, practically turn into rivulets in summer, especially in the upper areas.

The backwaters form a specially attractive and economically valuable feature of Kerala. They include lakes and ocean inlets which stretch irregularly along the coast. The biggest backwater is the Vembanad lake, some 200 sq km in area, which opens out into the Arabian Sea at Cochin port. The Periyar, Pamba, Manimala, Achenkovil, Meenachil and Moovattupuzha rivers drain into this lake. The other important backwaters are Veli, Kadinamkulam, Anjengo, Edava, Nadayara, Paravoor, Ashtamudi (Quilon), Kayamkulam, Kodungallur (Cranganore) and Chetuva, The deltas of the rivers interlink the backwaters and provide excellent water transporta-

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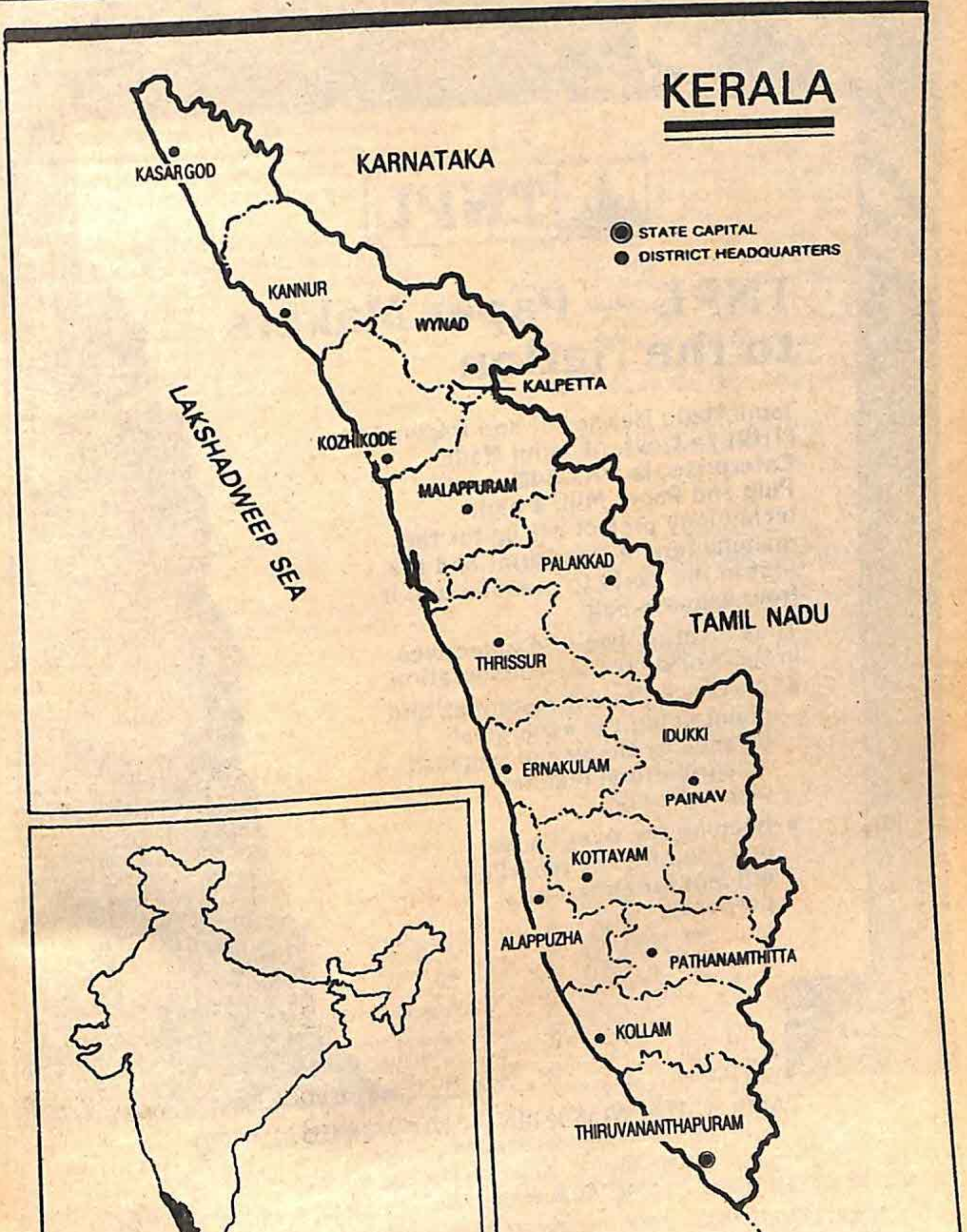
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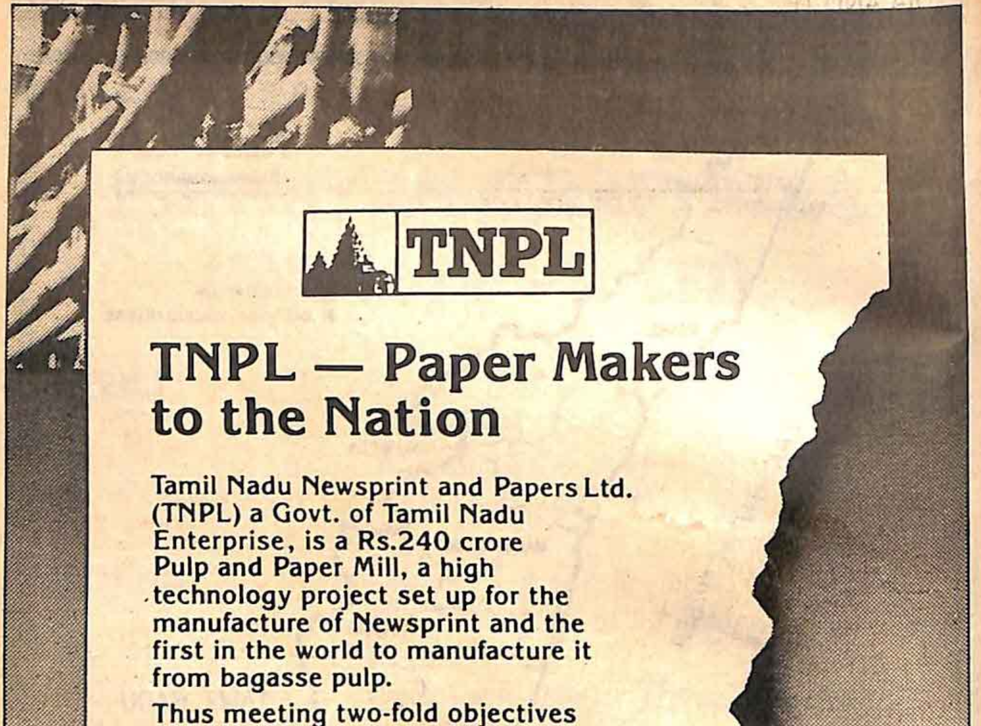

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tion in the lowlands of Kerala. A navigable canal, 367 km long, stretches from Thiruvananthapuram, the capital of Kerala, to Tirur in the far north.

History: When India became free, Kerala was made up of two princely states, Travancore and Cochin, and Malabar which was under the direct administration of the British. One of the first steps taken by independent India was to amalgamate small states together so as to make them viable administrative units.

In pursuance of this policy the Travancore and Cochin states were integrated to form Travancore-Cochin State on 1st July, 1949. But Malabar remained as part of the Madras Province. Under the States Re-organization Act of 1956, Travancore-Cochin State and Malabar were united to form the State of Kerala on 1st November, 1956.

Some territorial adjustments had necessarily to be made on re-organization. In this adjustment, Kerala lost to Madras (now Tamil Nadu) the taluks of Thovala, Agasteeswaram, Kalkulam and Vilavancode in the far south and Shencotta in the east, while it gained the Malabar district and the Kasargod taluk of South Kanara district in the north. The Laccadive, Minicoy and Amindivi islands lying off the coast of Malabar were detached from Kerala and declared as Union Territory.

Administration: The state has a unicameral legislature. The Legislative Assembly has 141 members.

The state is divided into 14 districts.

Districts

Districts	Area sq km	Population '91	Headquarters
Thiruvananthapuram	2,186.00	2,938,583	Thiruvananthapuram
Kollam	2,687.50	2,398,285	Kollam
Alappuzha	1,360.58	1,990,603	Alappuzha
Pathanamthitta	2,518.98	1,186,628	Pathanamthitta
Kottayam	2,195.50	1,819,581	Kottayam
Idukki	5,149.62	1,076,555	Painav
Ernakulam	2,358.19	2,797,779	Ernakulam
Thrissur	2,993.90	2,734,333	Thrissur
Palakkad	4,389.80	2,376,160	Palakkad
Malappuram	3,632.30	3,093,190	Malappuram
Kozhikode	2,333.30	2,612,897	Kozhikode
Wyanad	2,125.60	671,195	Kalpetta
Kannur	2,968.00	2,244,819	Kannur
Kasargod	1,961.30	1,070,629	Kasargod

State of the Economy: Kerala with its high population presents complex problems in the sphere of food, employment and housing. The state is 50 per cent short of food. Owing to historical and climatic reasons the state has developed commercial agriculture more than food crops. Consequently, the state is short of foodgrains, especially rice which is the staple food of the people.

Kerala has a unique cropping pattern. It accounts for 92 per cent of India's rubber, 70 per cent of coconut, 60 per cent of tapioca and almost 100 per cent of lemon grass oil. Kerala is the single largest

Kerala Women's First

Kerala women have many firsts to their credit. The latest is the appointment of Miss M. Fathima Beevi (former judge of the Kerala High Court) as the judge of the Supreme Court of India. She is the first-ever woman to become a member of the country's highest judicial body.

Kerala contributed India's first woman Magistrate (Mrs. Omanakunjamma), first woman Munsiff, first woman Sessions Judge, first woman High Court Judge (all these positions held by Mrs. Anna Chandy), first woman Chief Engineer (Ms. P. K. Thresia), first woman I.A.S. officer (Mrs. Anna George Malhotra) and first woman Director of Animal Husbandry (Annamma Jacob).

Kerala has the highest literacy rate for women in India—86.93 according to 1991 census.

It goes to the credit of Kerala that in 1990 it pioneered the formation of an exclusive Womens Commission to safeguard the interests of women.

Place names change

In 1990 Kerala Government decided to do away with anglicised place names in the state and replaced them with Malayalam names currently in use. Six districts and 17 taluks were renamed. They are (old names in bracket):

Districts

1) *Thiruvananthapuram (Trivandrum)*
2) *Kollam (Quilon)*
3) *Alappuzha (Alleppey)*
4) *Thrissur (Trichur)*
5) *Palakkad (Palghat)*
6) *Kannur (Cannanore)*

Taluks

1) *Thalasseri (Tellicherry)*
2) *Vadakara (Badgara)*
3) *Paravur (Parur)*
4) *Aluva (Alwaye)*
5) *Kochi (Cochin)*
6) *Devikulam (Devicolam)*
7) *Changanassery (Changanacherry)*
8) *Chirayinkizh (Chirayinkil)*
9) *Cherthala (Shertalai)*
10) *Chavakkad (Choughat)*
11) *Kodungallur (Cranganore)*
12) *Thrissur (Trichur)*
13) *Palakkad (Palghat)*
14) *Mannarkkad (Mannarghat)*
15) *Mananthvadi (Mananthody)*
16) *Sulthanbatheri (Sultan's Battery)*
17) *Kannur (Cannanore)*

Note: *Name of Calicut Dist. had been changed to 'Kozhikode' earlier.*

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Kerala's Seesaw Politics

Nov. 1, 1956: Birth of Kerala.
Mar. 1957, First Assembly Election.
April 5, 1957: E.M.S. ministry (Communist) sworn in.
July 31, 1959: E.M.S. ministry dismissed.
Feb. 1960: Election to the Assembly.
Feb. 22, 1960: Pattom Thanu Pillai ministry sworn in (Congress).
Sept. 25, 1962: Pattom appointed Governor of Punjab.
Sept. 26, 1962: R. Sankar ministry sworn in (Congress).
Sept. 10, 1964: Sankar ministry goes.
Mar. 1965: Assembly election (infructuous).
Feb. 1967: Election to the Assembly.
March 6, 1967: Second E.M.S. ministry sworn in (Communist).
Oct. 24, 1969: E.M.S. ministry goes.
Nov. 1, 1969: Achutha Menon ministry in (Left United Front).
June 26, 1970: Assembly dissolved.
Aug. 1, 1970: Achutha Menon ministry resigns.
Sept. 1970: Assembly Election.
Oct. 4, 1970: Second Achutha Menon ministry in.
Mar. 1977: Election to the Assembly.
Mar. 25, 1977: Karunakaran ministry sworn in (Congress).
April 25, 1977: Karunakaran resigns.
April 27, 1977: A. K. Antony sworn in Chief Minister (Congress).
Oct. 27, 1978: Antony resigns.
Oct. 29, 1978: P. K. Vasudevan Nair ministry sworn in (Left United Front).
Oct. 7, 1979: Vasudevan Nair goes.
Oct. 11, 1979: C. H. Mohammed Koya ministry sworn in (Right United Front).
Dec. 1, 1979: Mohammed Koya goes.
Jan. 1980: Election to the Assembly.
Jan. 25, 1980: E. K. Nayanar ministry sworn in (Left United Front).
Oct. 20, 1981: Nayanar ministry goes.
Dec. 28, 1981: K. Karunakaran ministry sworn in (United Democratic Front).
Mar. 17, 1982: Karunakaran ministry resigns.
May 19, 1982: Assembly Election.
May 24, 1982: Karunakaran ministry sworn in (United Democratic Front).
March 23, 1987: Assembly election.
March 26, 1987: E. K. Nayanar ministry takes over (Left Democratic Front).
June 24, 1991: K. Karunakaran Ministry sworn in.

producer of a number of other crops like banana and ginger, besides tea and coffee in abundance.

Kerala's agricultural production went up sharply in 1983-84 and continued to increase modestly till 1985-86.

Devastating rains and floods played havoc with her economy in 1985-86 and drought in 1986-87. Both production and productivity of almost all the major crops in the state suffered as a result of natural disurbances, the crops most affected being coconut, cardamom, pepper and coffee.

**Rubber:* Production increased from 1.85 lakh tonnes in 1985-86 to 2.38 lakh tonnes in 1988-89. Area of cultivation is 358,957 hectares. This is 88.24 per cent of India's total of 415,000 hectares.

**Coffee:* Coffee plantations in Kerala were devastated by the drought compared to coffee plantations elsewhere in the country where the effects of drought were less severe. In 1984-85 coffee was grown in 65,641 hectares. (Production 35,565 tonnes). This is 35.74% of the total area of coffee cultivation in the country. In 1985-86 the production was 23,550 tonnes only. In 30 years coffee production in the state increased more than seven times. In 1988-89 Kerala produced 47,425 tonnes of coffee (area – 65,637 hectares). Coffee export from the state in 1985-86 was 46,373 tonnes (Rs. 128.42 crore).

**Tea.* Despite the severe drought and power cut, tea production in Kerala improved. In 1988-89 tea was grown in 34,642 hectares (8.84% of India's total). Total production in 1988-89 was 65,771 tonnes.

**Cardamom.* The production and yield of cardamom were severely affected by the prolonged drought. In 1988-89 production was 2,108 tonnes. Total export earning in 1985-86: Rs. 49.20 crore (90% of India's total).

In the industrial sector, the power cut imposed consequent to drought, continued to affect activities during the last few years. State's net domestic product from manufacturing sector rose from Rs. 914.13 crore in 1985-86 to 1,087 crore in 1988-89. There were 12,483 registered factories in the state and the total work force in these factories was 310,412 in 1989.

Universities: Kerala University, Thiruvananthapuram; Calicut University, Thenjippalam; Cochin University of Science and Technology, Kochi; Mahatma Gandhi University, Kottayam; Kerala Agl University, Thrissur.

Tourist Centres: Under the aegis of the Department of Tourism and Kerala Tourism Development Corporation, many places in Kerala have been developed

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* Please also see the chapter 'Plantations' under 'India'.

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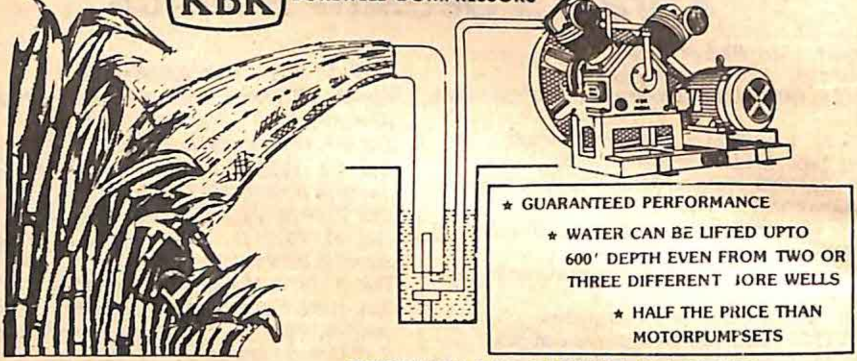

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into tourist centres.

Thiruvananthapuram (Trivandrum) the capital city had been once the cleanest city in India. It is an abode of temples, mosques and churches. Kovalam Beach Resort is 12 km from there. Neyyar Dam (19 km), Ponmudi (61 km) and Padmanabhapuram Palace (53 km) are other places of interest.

Periyar Wild life Sanctuary at Thekkady in Idukki District is another attraction. Sabarimala, abode of Lord Ayyappan, is a famous pilgrim centre in Pathanamthitta Dist.

Kochi (Cochin) is known as the 'Queen of the Arabian Sea'. The beautiful Willingdon Island with the adjoining port is a great attraction. Kalady in Ernakulam District is the birthplace of Sri Sankaracharya. Guruvayur in Thrissur Dist. has the famous Lord Krishna shrine. Kalamandalam, the renowned Kathakali Centre is in Trissur Dist. Kozhikode (Calicut) is historically important as the capital of the Zamorins. Edakal cave in Wyanad district is centuries old.

Governor: B. Rachaiah; **Chief Minister:** K. Karunakaran (Congress-I).

Madhya Pradesh

Area: 443,446 sq km; **Capital:** Bhopal; **Districts:** 45; **Population:** 66,135,862; **Males:** 34,232,048; **Females:** 31,903,814; **Increase (1981-91):** 13,957,018; **Growth Rate (per cent) 1981-91:** 26.75; **Density (persons per sq. km.):** 149; **Sex Ratio (females per 1000 males):** 932; **Literacy: 43.45%; Males:** 57.43; **Females:** 23.39; **Language:** Hindi; **Per capita:** Rs. 1,988.00.

Situated in the centre of India and bounded on all sides by other states, Madhya Pradesh (Central Province) is the biggest state in the country.

Physiography: Except for the valleys of the Narmada and the Tapti, M.P. consists of a plateau with a mean elevation of 1600 ft above sea level, interspersed with the mountains of the Vindhya and the Satpura ranges. The main river systems are the Chambal, Betwa, Sindh, Narmada, Tapti, Mahanadi and Indravati.

The average rainfall in the different regions of the state ranges from 45 to 90 cm. The climate is extreme in the north, temperate and breezy in the plateau and generally hot and humid in the eastern and southern plains. Nearly a third of the state's area is covered with tropical forests.

M.P. has the largest population of Scheduled Tribes of all states and a high proportion of Scheduled Castes. Together, they constitute nearly one-third of the population. 23 districts are predominantly tribal. The major tribes of MP are Gonds, Bhils, Oraons, Korkens and Kols. Massive development efforts under tribal sub-plan are going on in these areas.

History: Under the provisions of the States Reorganization Act, 1956, the State of Madhya Pradesh was formed on November 1, 1956. It consists of the 17 Hindi districts of the previous state of that name, the former State of Madhya Bharat (except the Sunel enclave of Mandsaur district), the former Vindhya Pradesh, the State of Bhopal and Sironj subdivision of Kotah district, which was an enclave of Rajasthan in Madhya Pradesh.

Administration: The Legislature is unicameral with one house—the Legislative Assembly. The state is divided into 45 districts.

Districts

District	Area (sq km)	Population (1991)	Head-quarters
Balaghat	9,229	1,362,731	Balaghat
Bastar	39,114	2,270,472	Jagdalpur
Betul	10,043	1,180,527	Betul
Bhind	4,459	1,214,480	Bhind
Bhopal	2,772	1,350,302	Bhopal
Bilaspur	19,897	3,796,553	Bilaspur
Chhatarpur	8,687	1,158,853	Chhatarpur
Chhindwara	11,815	1,563,332	Chhindwara
Damoh	7,306	897,544	Damoh
Datia	2,038	397,743	Datia
Dewas	7,020	1,032,522	Dewas
Dhar	8,153	1,366,626	Dhar
Durg	8,537	2,398,497	Durg
East Nimar	10,779	1,432,855	Khandwa
Guna	11,065	1,309,451	Guna
Gwalior	5,214	1,414,948	Gwalior
Indore	3,898	1,830,870	Indore
Hashangabad	10,037	1,265,970	Hashangabad
Jabalpur	10,160	2,645,232	Jabalpur
Jhabua	6,782	1,129,356	Jhabua
Mandla	12,269	1,291,313	Mandla
Mandsaur	9,791	1,555,481	Mandsaur
Morena	11,594	1,707,619	Morena
Narsinghpur	5,133	784,523	Narsinghpur
Panna	7,135	684,721	Panna
Raigarh	12,924	1,724,420	Raigarh
Raipur	21,258	3,902,609	Raipur
Raisen	8,466	877,369	Raisen
Rajgarh	6,154	992,315	Rajgarh
Rajnandgaon	11,127	1,439,524	Rajnandgaon
Ratlam	4,861	971,309	Ratlam
Rewa	6,134	1,550,140	Rewa
Sagar	10,252	1,646,198	Sagar
Satna	7,502	1,462,412	Satna
Sehore	6,578	840,427	Sehore
Seoni	8,758	999,762	Seoni
Shahdol	14,028	1,743,068	Shahdol
Shajapur	6,196	1,032,520	Shajapur
Shivpuri	10,278	1,131,933	Shivpuri
Sidhi	10,226	1,371,935	Sidhi
Surguja	22,337	2,082,930	Ambikapur
Tikamgarh	5,048	940,609	Tikamgarh

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Vidisha	7,371	971,079	Vidisha
West Nimar	13,450	2,026,317	Khargone

State of Economy: The economy of Madhya Pradesh is primarily agriculture-based. Nearly 80 per cent of the population live in villages. Over 52.06 per cent of the land area is cultivable, of which 13.4 per cent is under irrigation. The Malwa region abounds in rich black cotton soil, the low lying areas of Gwalior, Bundelkhand, Baghelkhand and the Chhattisgarh plains have lighter soil, whereas the Narmada valley is formed of deep rich alluvial deposits. The main food crops are jowar, wheat and rice and coarse grains such as kodo, kulki, soma, etc. Important among the commercial crops are oilseeds, cotton and sugarcane. The state is poised for a breakthrough in soyabean cultivation.

M.P. is very rich in natural resources like iron ore, manganese ore, coal, limestone and tin. The

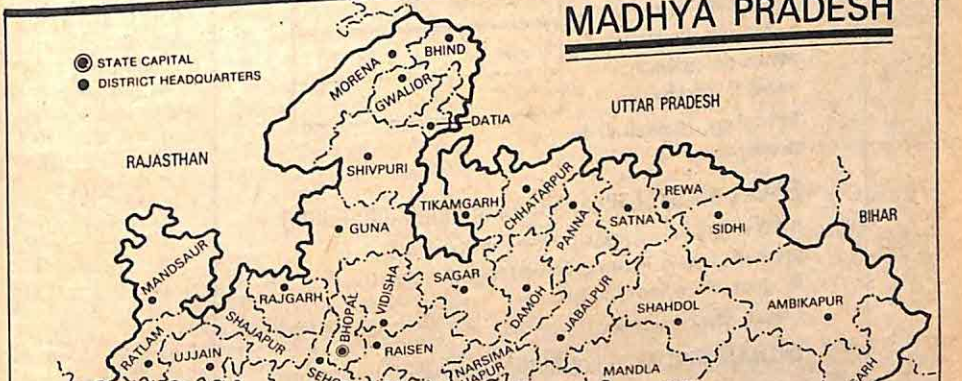
A ban on 'Harijan'

The Madhya Pradesh Government last year prohibited the use of the word "Harijan" and replaced it with "Anusuchit Jati" in official work.

In pursuance of the Government Order issued earlier, the departments and officers concerned have been instructed to ensure the compliance of the above mentioned Government Order strictly.

As per this order, the name of the department of "Adivasi Harijan Avam Pichhada Varg Kalyan Vibhag' has been changed "Adim Jati, Anusuchit Jati Avam Pichhada Varg Kalyan Vibhag,' an official release said.

(The word "Harijan" to describe the Scheduled Caste people was coined by Mahatma Gandhi to replace the earlier words used to describe them).



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major industries are the steel plant at Bhilai, Bharat Heavy Electricals at Bhopal, the Aluminium Plant at Korba, the Security Paper Mills at Hoshangabad, the Bank Note Press at Dewas, the Newsprint Mill at Nepanagar and Alkaloid Factory at Neemuch, Cement Factories, Vehicle Factory, Ordnance factory and Guncarriage Factory. There are also 23 textile mills, 7 of them nationalized.

The Bhilai Steel Plant near Durg is one of the six major steel mills in India. A power station at Korba (Bilaspur) with a capacity of 420 MW serves Bhilai, the Aluminium Plant and the Korba coalfields.

The Bharat Heavy Electricals was set up by the Government of India at Bhopal during the Second Plan period. This is India's first heavy electrical equipment factory and also one of the largest of its type in Asia. It makes a variety of highly complicated equipments required for generation, transmission, distribution and utilization of electric power.

A large number of agro-based industries have also come up. Large number of solvent extraction plants based on soyabean have been established. Fourteen Industrial Growth Centres are being developed in the state.

Universities: Awadesh Pratap University, Rewa; Barakatulla University, Bhopal; Devi Ahilya Vishwa Vidyalaya, Indore; Guru Ghasidas University, Bilaspur; Indira Kala Sangit Vishwa Vidyala, Khairagarh; J. Nehru Krishi Vishwa Vidyalaya, Jabalpur; Jiwaji University, Gwalior; Ravi Shankar University, Raipur; Rani Durgavati Vishwa Vidyalaya, Jabalpur; Vikram University, Ujjain, Chitrakoot Gramodaya Vishwavidyala, Chitrakoot.

Tourist Centres: Khajuraho, once the capital of Chandella rulers is 595 km from Delhi. The embodiment of the great artistic activity of the 9th to the 12th centuries. Only 22 temples out of 85 have survived.

Ujjain with historic palaces, Sanchi with ancient Buddhist monuments, Bhopal the lake-side capital city, Jabalpur famous for marble rocks and Gwalior with beautiful forts, Indore, the largest city in the state, which holds the Kumbha fair every 12th year, Panchmarhi, the hill station, Mandav, the historical town and Amarkantak, the source of the Son and Narmada rivers are among the other tourist attractions.

Kanha National Park near Jabalpur is one of the most beautiful wild life sanctuaries in India.

Governor: Mahmood Ali; **Chief Minister:** Sunderlal Patwa (BJP).

Maharashtra

Area: 307,690 sq km; **Capital:** Bombay; **Language:** Marathi; **Districts:** 31; **Population:** 78,706,719; **Males:** 40,652,056; **Females:** 38,054,663; **Increase (1981-91):** 15,922,548; **Growth Rate (per cent) 1981-91:** 25.36; **Density (persons per sq. km.):** 256; **Sex Ratio (females per 1000 males):** 936; **Literacy:** 63.10%; **Males:** 74.80; **Females:** 50.50; **Per capita:** Rs. 3,430.00.

Maharashtra is the third largest state in India both in area and population. Only Uttar Pradesh and Bihar have larger populations and Madhya Pradesh and Rajasthan have larger areas than Maharashtra. The state is bounded by the Arabian Sea in the west, Gujarat in the north west, MP in the north, AP in the south east and Karnataka and Goa in the south.

Physiography: The State of Maharashtra forms a huge irregular triangle with its base on the west coast of India, overlooking the Arabian Sea. The coastal strip, about 720 km long and not more than 80 km wide, is the Konkan, dotted with paddy fields and coconut gardens. The Sahyadris or the Western Ghats running almost parallel to the sea coast flank the Konkan on its east. To the east of the Sahyadris stretches a vast plateau forming the apex of the triangle.

This plateau is drained by the great rivers Godavari, Bhima and Krishna, which rise in the Sahyadris and flow eastward across the Indian peninsula, into the Bay of Bengal. The plateau is extremely fertile and provides excellent crops of cotton, oils seeds and sugarcane. The rainfall in the state varies considerably, the areas west of the Sahyadris like the districts of Thane, Raigad, Ratnagiri and Sindhudurg receive heavy rains with an annual average of 200 cm.

The areas which lie in the rain-shadow of the Sahyadris, however, comprise the major portion of the state area and get an average rainfall of around 60 to 75 cm annually and in some areas less than 50 cm. These areas include the districts of Nashik, Pune, Ahmednagar, Dhule, Jalagaon, Satara, Sangli, Solapur and parts of Kolhapur.

History: Historically, Maharashtra falls into three regions. Western Maharashtra, Vidarbha and Marathwada. Among these, Vidarbha has a hoary past and is mentioned many times in the Mahabharata. Maharashtra as a whole figures in history during the Mauryan period when it became part of the Mauryan Empire. After the fall of the Mauryas, Maharashtra was under the domination of a number of Hindu dynasties for nearly a thousand years. The Yadavas, the last of these dynasties ended in 1294. Thereafter the state came under a succession of Muslim rulers.

With the rise of Shivaji, Maharashtra entered a new phase in history. Shivaji welded the Marathas into a powerful nation. They became rulers instead of subjects. The Peshwas who succeeded Shivaji built up a Maratha Empire which extended from Gwalior in the north to Tanjore in the south. The Maratha power received a setback at Panipat, in 1761, when the Afghan ruler Ahmed Shah Abdali routed the Maratha forces. They recovered only to confront the British power and to be decisively defeated in 1818. After the defeat of 1818 Maharashtra settled down as part of the Bombay Presi-

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dency under the British administration.

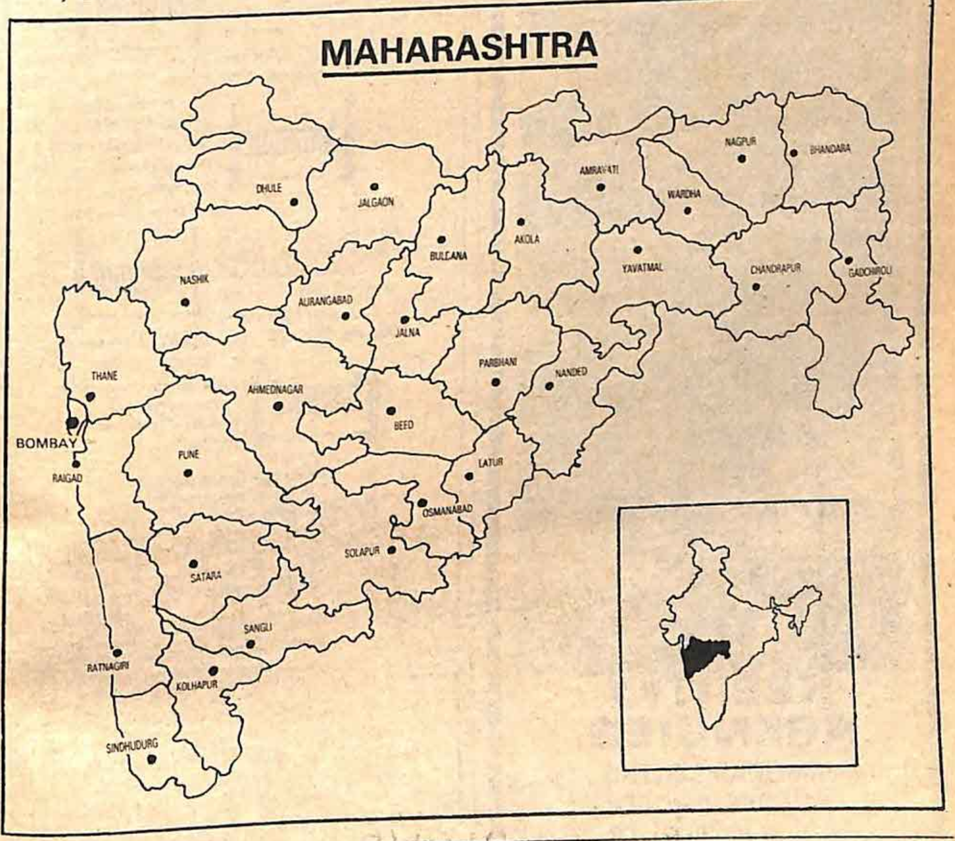
In independent India, Bombay continued as one state consisting of Maharashtra and Gujarat. This was an experiment in bilingualism—that is, one state comprising two linguistic units. The experiment did not work. Under the Bombay Re-organization Act, 1960 Maharashtra and Gujarat were formed into separate states on May 1, 1960, Maharashtra retaining the old capital Bombay.

Administration: Legislature: The state has a bicameral legislature—the Legislative Assembly (Vidhan Sabha) and the Legislative Council (Vidhan Parishad).

The state is divided into 31 districts.

Districts

District	Population 1991	Area (in sq km)	Head-quarters
Greater Bombay	9,908,547	603	Bombay
Bombay Suburban	—	400	Bandra (E)*
Thane	5,224,679	9,558	Thane
Raigarh	1,818,130	7,148	Alibag
Ratnagiri	1,539,416	8,249	Ratnagiri
Sindhudurg	830,726	5,219	Kudal
Nashik	3,837,597	15,530	Nashik
Dhule	2,529,346	13,150	Dhule
Jalgaon	3,184,688	11,765	Jalgaon
Ahmednagar	3,362,359	17,048	Ahmednagar
Pune	5,494,336	15,642	Pune
Satara	2,444,857	10,484	Satara
Sangli	2,197,977	8,572	Sangli
Solapur	3,224,034	14,874	Solapur
Kolhapur	2,974,352	7,633	Kolhapur
Aurangabad	2,209,052	9,172	Aurangabad
Jalna	1,364,718	8,656	Jalna
Parbhani	2,113,168	11,038	Parbhani
Bid	1,818,499	10,624	Bid
Nanded	2,314,783	10,502	Nanded
Osmanabad	1,271,840	7,510	Osmanabad
Latur	1,672,482	7,304	Latur
Buldana	1,881,438	9,661	Buldana
Akola	2,211,016	10,575	Akola
Amaravati	2,206,562	12,212	Amaravati



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Yavatmal	2,073,708	13,584	Yavatmal
Wardha	1,065,589	6,310	Wardha
Nagpur	3,274,974	9,931	Nagpur
Bhandara	2,103,276	9,213	Bahandara
Chandrapur	1,768,945	10,490	Chandrapur
Gadchiroli	785,626	15,433	Gadchiroli

* The new Bombay Suburban district comprising Kurla, Andheri and Borivile came into being in October 1990. However, no separate population figure has been given by the census report of 1991.

State of Economy: About 70 per cent of the people in Maharashtra depend on agriculture. About 12.22 per cent of the total cultivated area is irrigated. The principal food crops are wheat, rice, jowar, bajra and pulses. Important cash crops are cotton, sugarcane, groundnut and tobacco. Although the state accounts for 9.2 per cent of the total population of the country, it shares about 11 per cent of industrial units, over 17 per cent of labour, about 16 per cent of investment and 23 per cent of the value of industrial output.

The industry groups contributing substantially to Maharashtra's industrial production are chemicals and chemical products, textiles, electrical and non-electrical machinery and petroleum and allied products. Other important industries are pharmaceuticals, engineering goods, machine tools, steel and iron castings and plasticware. It also leads in sophisticated electronics equipment. Santa Cruz Electronics Export Processing Zone (SEEPZ), is a free trade zone for cent per cent export.

The development of offshore oil fields at Bombay High and the nearby Bassein North Oil Fields have contributed greatly for the industrial development of the state.

Bombay is the Hollywood of India as far as film production is concerned. New growth centres are coming up at Nashik, Aurangabad, Nagpur, Jalgaon.

Universities: Amaravati University, Amaravati; Indian Institute of Technology, Powai, Bombay; International Inst. for Population Sciences, Deonar, Bombay; Konkan Krishi Vidyapith, Dapoli; Mahatma Phule Krishi Vidyapith, Rahuri; Marathwada University, Aurangabad; Nagpur University, Nagpur; Punjab Rao Krishi Vidyapith, Akola; Shivaji University, Kolhapur; SNDT Women's University, Bombay; Tata Inst. of Social Sciences, Sion, Bombay; Central Inst. of Fisheries Edn., Bombay; North Maharashtra University, Jalgaon; Y. B. Chavan Open University, Nashik; Deccan College of Post-graduate and Research Institute, Pune.

Tourist Centres: Some of the important tourist centres are the Caves—Ajanta, Ellora, Elephanta, Kanheri and Karala; Hill stations: Mahabaleshwar, Matheran and Panchagani; Religious places: Pandharpur, Nashik, Shirdi, Aundhanagnath, Nanded and Ganapatipule.

Governor: C. Subramaniam; **Chief Minister:** Sudhakar Rao Naik (Congress-I).

Manipur

Area: 22,327 sq km; **Capital:** Imphal; **Languages:** Manipuri & English; **Districts:** 8; **Population:** 1,826,714; **Males:** 913,511; **Females:** 895,203; **Increase (1981-91):** 405,761; **Growth Rate 1981-91:** 28.56; **Density (persons per sq. km.):** 82; **Sex Ratio (females per 1000 males):** 961; **Literacy:** 60.96%; **Males:** 72.98; **Females:** 48.64; **Per capita** (1987–88): Rs. 2736.14.

Manipur has been a Union Territory from 1956 and a full-fledged state from 1972.

Manipur is bounded by Nagaland in the north,

Churchgate: 120, going strong

Churchgate station serving 24 lakhs people daily completed 120 years on January 10, 1991. Not many of the lakhs of commuters who pass through the place daily for innumerable years now would be aware of the changes that this station has undergone over the last century and more.

The tale of Churchgate begins on January 10, 1870, when the station was first opened as the terminus of the erstwhile Bombay, Baroda and Central India (BB&CI) Railway, with just one line inside the platform.

Western Railway came into being in 1959 and is presently the second largest railway in the country.

During the 1850's Bombay was a quaint, charming, walled town, self-sufficient in all respects. The fortress like structure had three main gates: the Bazar gate, the Apollo gate and, finally, Churchgate which got its name from a church dedicated to St. Thomas which stood just inside the walls.

The station has undergone dramatic changes after a number of remodellings over the years and is presently a multi-storeyed building.

Churchgate station is the starting point for 857 suburban train services operating right up to Virar in Thane district. Twenty-four lakh commuters use the station everyday to entrain and detrain while going to work and home.

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Mizoram in the south, Upper Burma in the east and Cachar district of Assam in the west.

History: Manipur has a varied and proud history from the earliest times. It came under British rule as a princely state in 1891. The Manipur Constitution Act, 1947, established a democratic form of government with the Maharajah as the Executive Head and a legislature constituted by election on adult franchise. The Legislative Assembly so constituted functioned till it was dissolved on the integration of the erstwhile state with the Dominion of India in October, 1949.

Then it was governed as if it were a Chief Commissioner's Province and then as a Part 'C' State under the Indian Constitution with effect from 26-1-1950. In 1950-51 an advisory form of popular government was introduced and in 1957 this was replaced by a Territorial Council of 30 elected and 2 nominated members. In 1963, a legislative assembly of 30 elected and 3 nominated members was established. The status of the Administrator was raised from that of a Chief Commissioner to that of a Lieutenant Governor in December, 1969. Manipur achieved full statehood on January 21, 1972.

Administration: Manipur was reorganized into 8 districts in 1983. The district headquarters bear the same name as the districts.

Districts

District	area (sq.km.)	Population 1991
Imphal	1201	707,184
Bishnupur	530	179,903
Thoubal	507	290,393
Ukhrul	4,544	109,952
Senapati	3,271	206,933
Tamenglong	4,391	85,572
Churachandpur	4,570	176,043
Chandel	3,313	70,734

State of Economy: The main crop of the state is paddy. Maize is cultivated in the foot hills. Out of the area of 22,327 sq km, the area available for cultivation is about 2.1 lakh hectares only. The area under paddy is 1.86 lakh hectares out of which 1.10 lakh hectares is in the valley. About 70% of the valley has been brought under high yielding rice.

The state has made significant advance in the field of agriculture. Per hectare consumption of fertiliser reached 56 kg during 1986–87. More than 70% of the high yielding varieties of paddy are locally bred, punshi, phouoibi and KD series.

Handloom is the biggest industry in Manipur. There are 3 lakh spindles and at least 3 lakh persons are employed in the field.

The Manipur Spinning Mill, launched in 1974 has grown to use 16,416 spindles.

The 60 TPD capacity Khandsari Sugar Factory at Khangabok produced 600 quintals of sugar (86-87).

A TV assembly unit and a cycle assembly unit are working in full swing. A Mechanised Dye House was commissioned in 1987.

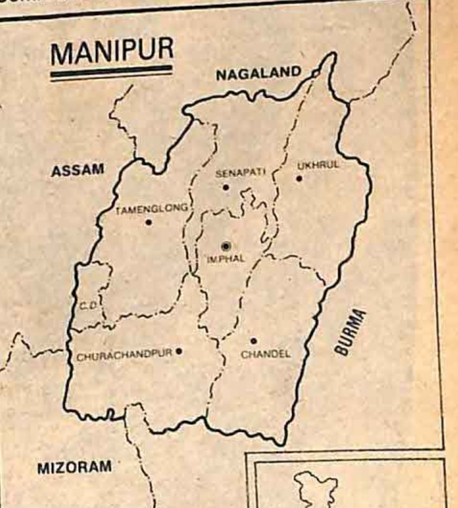
There are 5970 small scale industrial units in the state with almost 23,800 workers.

Sericulture: Manipur is the first to introduce Oak Tasar Industry. In the hill area there are 75 Tasar Farms, 1500 Tribal families (or 1500 members) produce about 30 million Tasar cocoons valued Rs. 3.00 million. Apart from this over 100 Scheduled Caste families in the valley practise Mulberry rearing in traditional ways producing 45,000 kg of raw silk annually by reeling and spinning and utilise the same in its exquisite handloom industry.

Universities: Manipur University, Imphal. The first Central Agricultural University is being set up at Imphal.

Tourist Centres: Called a 'Jewel of India' by Jawaharlal Nehru, Manipur lies in the shadows of hills. The picturesque Manipur valley dotted with gleaming lakes is famours for a variety of orchids. Manipuri dance is world famous. So also her exquistie handicrafts.

The important tourist centres in the state are Imphal, the capital and centre of all cultural and commercial activities adorned with two War Cemeteries maintained by the Commonwealth War Graves Commission, Govindajee Temple, Women bazaar,



Reachout/136/ EIL /91

Farm Varsity For North East

The first Central agricultural university is being set up at Imphal, the capital of the north-eastern state of Manipur at an estimated cost of Rs. 64 crore.

A Bill for the setting up of the university is to be introduced in the Parliament, according to an announcement by the Indian Council of Agricultural Research.

The proposed university, which will have an integrated system – teaching, research and extension – will have seven campuses in six States of the north-eastern region and will cover all the thrust areas in agriculture and allied sciences.

The campuses will be at Manipur (college of agriculture), Mizoram (college of veterinary science), Tripura (college of fisheries), Arunachal Pradesh (college of horticulture and forestry), Meghalaya (college of home science), Sikkim (college of agricultural engineering and post harvest technology) and college of postgraduate studies at Barapani in Meghalaya.

etc. Besides, the Bishnu temple at Bishnupur built in 1467 A.D., the Loktak lake, the biggest fresh water lake in eastern India, Keibul Lamjao, the only floating national park in the world, the Orchid Yard at Khongampat, etc. are also quite attractive.

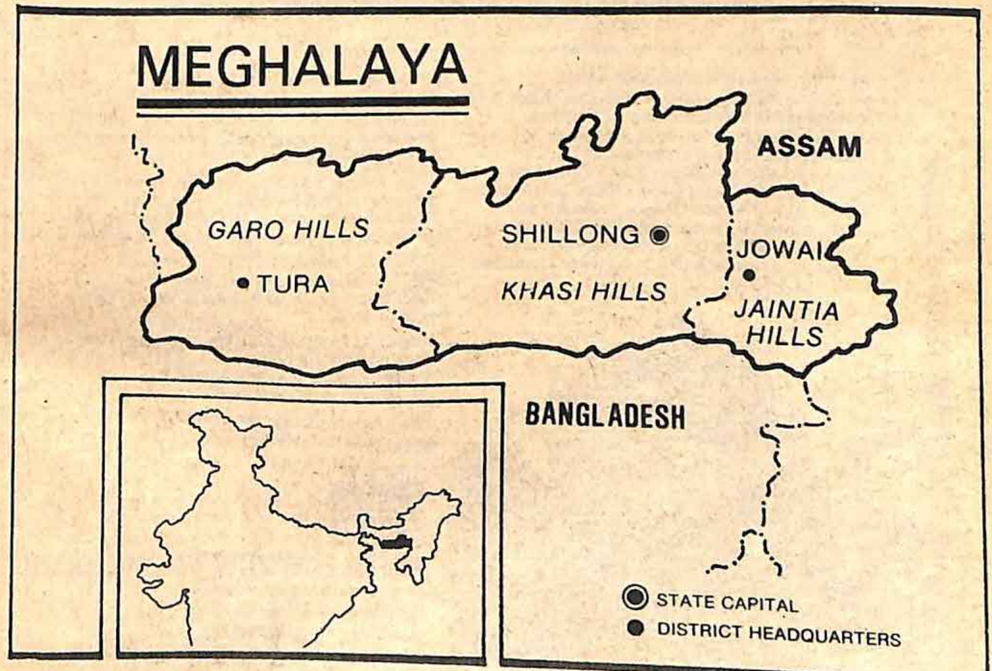
Accommodation facilities at important centres such as Waichou, Kaina, Phubala, Sendra and Tourist Lodge at Imphal are remarkable. Transport facilities are provided with Deluxe and Mini Buses and Taxi services at moderate charges.

Governor: Chintamani Panigrahi. **Chief Minister:** R.K. Ranbir Singh (Manipur People's Party).

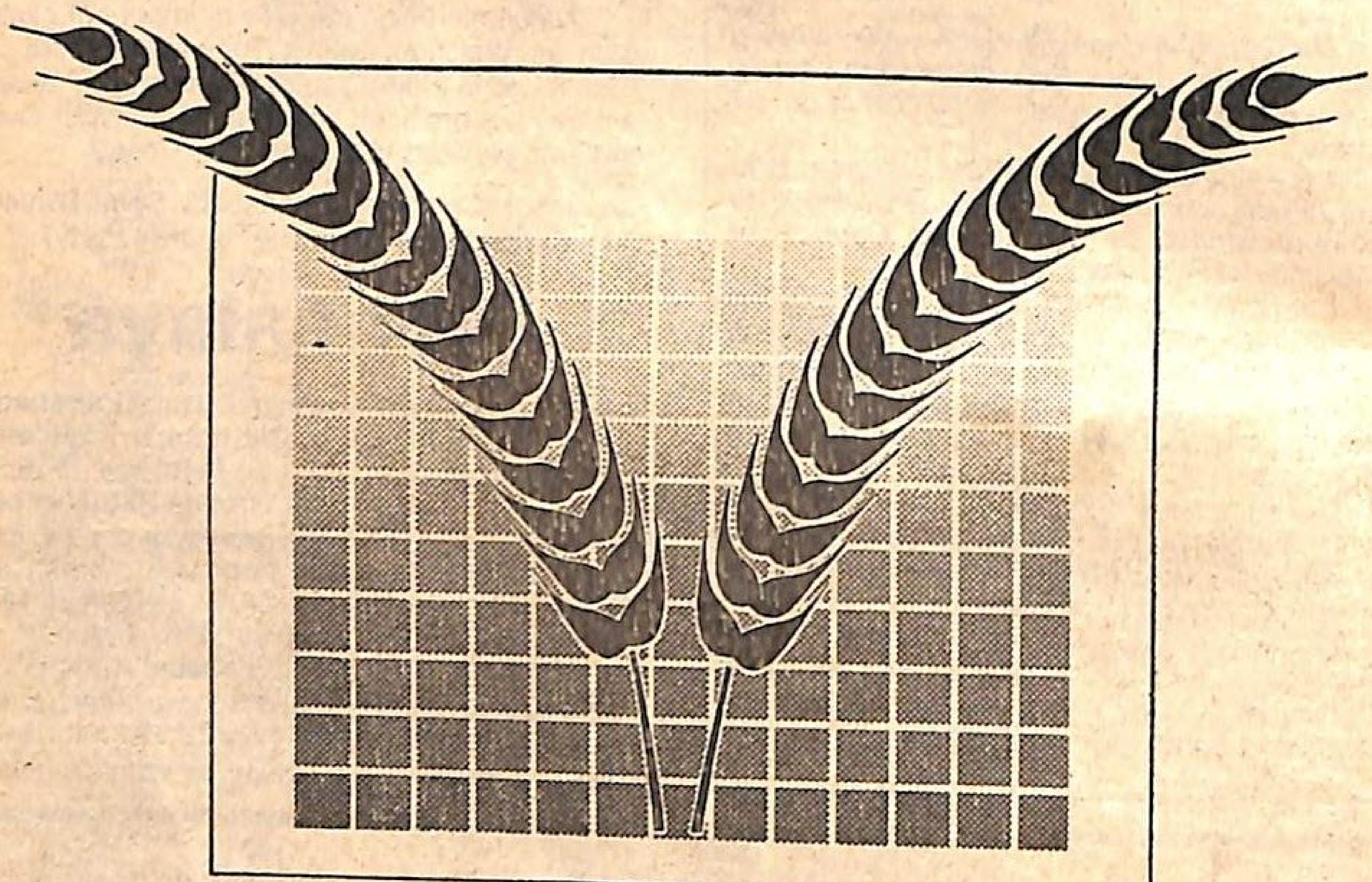
Meghalaya

Area: 22,429 sq km; **Capital:** Shillong; **Languages:** Khasi, Garo and English. **Districts:** 5; **Population:** 1,760,626; **Males:** 904,308; **Females:** 856,318; **Increase in (1981-91):** —; **Growth Rate (per cent) 1981-91:** 31.80; **Density (persons per sq. km.):** 78; **Sex Ratio (females per 1000 males):** 947; **Literacy:** 48.26%; **Males:** 51.57; **Females:** 44.78; **Per capita:** Rs. 1391.00 (1982-83).

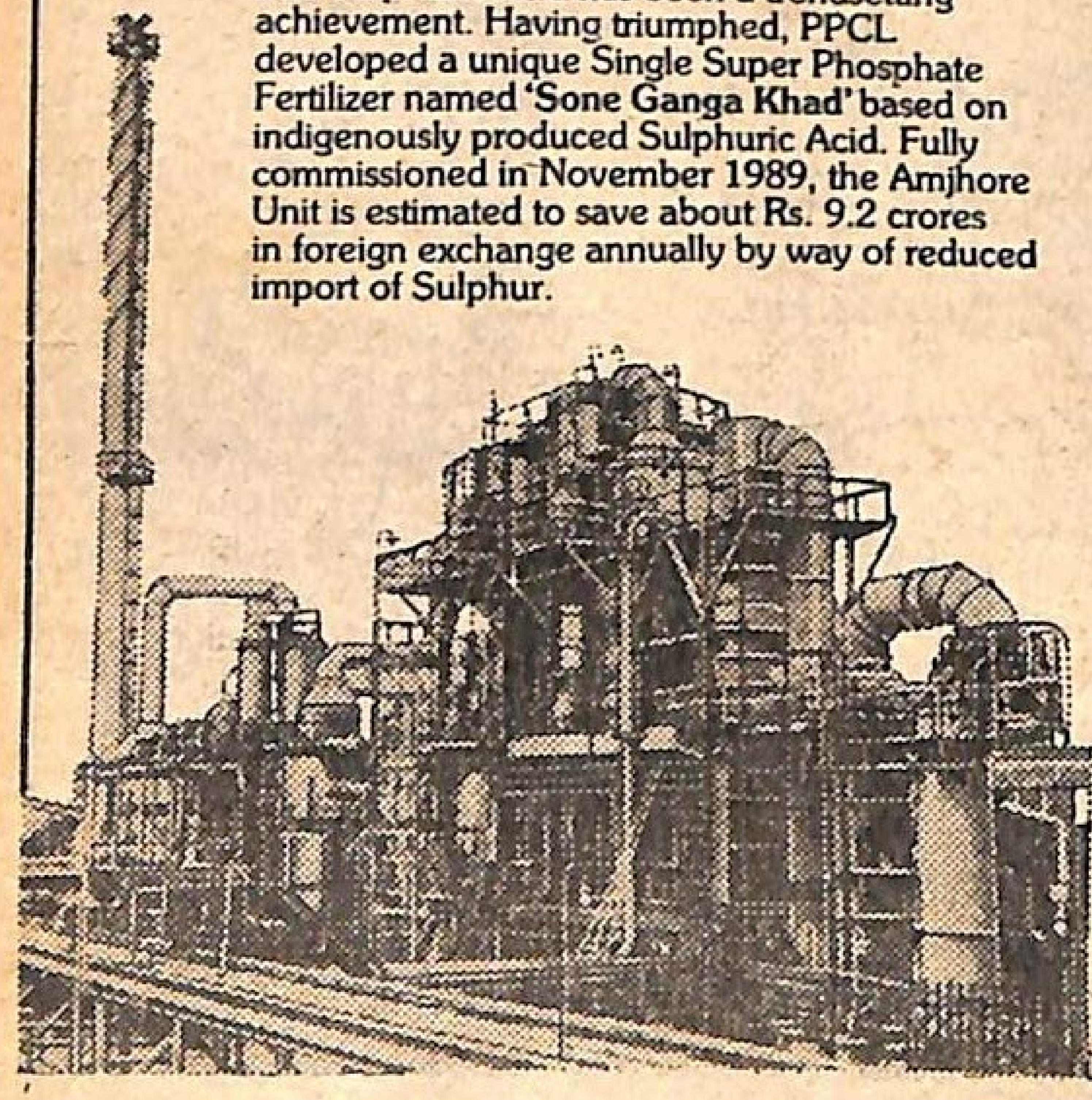
Meghalaya, literally 'the abode of the clouds' (Megha=clouds, Alaya=abode), was inaugurated as an autonomous state on April 2,1970. It was declared a state of the Indian Union on January



Performance that fulfils promises.



At PPCL, successful adaptation of new generation technology to convert vast deposits of multiple grade Sulphur Pyrites at Amjhore into Sulphuric Acid has been a trendsetting achievement. Having triumphed, PPCL developed a unique Single Super Phosphate Fertilizer named **'Sone Ganga Khad'** based on indigenously produced Sulphuric Acid. Fully commissioned in November 1989, the Amjhore Unit is estimated to save about Rs. 9.2 crores in foreign exchange annually by way of reduced import of Sulphur.



With **'Agriculture Grade Pyrites'** an effective amendment, PPCL has reclaimed 1.2 lakh hectares of Alkali soil in U.P. and Bihar, as a result producing 6 lakh tonnes of additional food grain every year.

PPCL has set a new trend in the usage of **'Mussoorie Phos'**, a unique Phosphatic Fertilizer and a product of Dehradun Unit, as an import substitute, saving about 60 Million Rupees in foreign exchange every year.

PPCL's Saladipura Project, possessing extensive deposits of Pyrites, is also on the take-off stage.

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Physiography: The exclusive tribal State of the Khasis, the Jaintias and the Garos is a mountain region. Shillong, the capital of Meghalaya, is situated in the centre of a high plateau. The highest peak in the state is the Shillong Peak 1965 m in height. Nokrek in the Garo Hills district is the next highest peak.

A number of rivers, none of them navigable, drain this mountainous area. Manda, Damring, Janjiram, Ringee, Ganol, Bugi and Simsang flow through the Garo Hills District Kynshi, Khri, Umtrew, Umngot, Umiam Mawphlang and Umiam Khwan flow through Khasi Hills district and Kupli, Myntdu & Myntang flow through Jaintia Hills district. All these rivers with rocky beds and swift currents abound in cataracts and waterfalls. The most picturesque waterfall is the one at Mawsmai village called Nohsngithiang near Cherrapunjee. Here, the waters of several rivulets are precipitated over a sheer cliff several hundred feet high.

The average annual rainfall of the state is 12,000 millimetres. In the capital city of Shillong, rainfall averages 2150 millimetres per annum. The Cherrapunjee-Mawsynram belt in the southern slopes of Khasi Hills has the distinction of having the world's heaviest rainfall, with an average of 12,700 millimetres per annum.

Meghalaya is a state of surpassing scenic beauty. Waterfalls and mountains, lakes, rising peaks and billowing hills, meadows, valleys and rushing rivers combine to make a rich panorama.

The Khasis, the Jaintias and the Garos are very ancient tribes, who had settled in these hills in remote past. They number about ten lakh.

Dance, music and sports reflect their way of life. Festive sounds of merry-making echo from hill to hill revealing the pulsating life of the tribal people. Mindful of their cultural heritage these simple folk are jovial and hospitable.

Administration: Meghalaya is a constituent state of the North Eastern Council. The state has a unicameral legislature. The Legislative Assembly consists of 60 members – 29 from Khasi Hills, 7 from Jaintia Hills and 24 from Garo Hills.

The following table shows the district-wise area and population of the state according to the final figures of 1981 census.

Districts

District	Area (sq km)	Population '91	Headquarters
East Khasi Hills	5,196	657,160	Shillong
West Khasi Hills	5,247	217,462	Nongstoin
East Garo Hills	2,603	189,043	Williamnagar
West Garo Hills	5,564	477,775	Tura
Jaintia Hills	3,819	219,186	Jowai
Total	22,429	1,760,626	

Meghalaya, originally, comprised two districts and three subdivisions. In order to accelerate the pace of development and to bring the administration closer to the people, the state has now been reorganized into five districts, and ten sub-divisions. For an all round development of the rural areas, the whole state is now covered by 30 Community Development Blocks.

State of Economy: The majority of the people depend on land for their livelihood. But the potential for agricultural expansion is very limited in Meghalaya due to the terrain. Jhumming or shifting cultivation, practised in the state on a large scale, is one of the biggest problems to be tackled in Meghalaya. This traditional practice is deeply rooted among the hill people.

However, the state government has made a modest beginning with a scheme to help the farmers to settle on lands which are suitable for steady cultivation. The state's Soil Conservation Department's resettlement scheme called Jhum Control Scheme envisages allotment of improved land to villagers together with supply of fertilizers, seeds, irrigation facilities, etc. The developed lands would also be linked with roads for marketing the produce. At present, the villages in selected areas with a minimum of 50 families are growing crops by modern methods.

The state is not so far industrially developed. However, new industrial units set up by or with the help of the Meghalaya Industrial Development Corporation are fast coming up. Some of them are:

The Meghalaya Plywood Ltd., The Associated Beverages (P) Ltd., The Meghalaya Essential Oils and Chemicals Ltd., The Meghalaya Phyto-Chemicals Ltd, The Komorah Limestone Mining Co. Ltd., The Meghalaya Towers and Trusses Ltd. and the Umiam Calcenates Ltd.

The public sector cement factory at Cherrapunjee known as the Mawmluh-Cherra Cement Ltd., which was producing 250 tonnes of cement daily, has been expanded to a production capacity of 930 tonnes per day.

Universities: NEHU–North Eastern Hill University, Shillong.

Tourist Centres: Meghalaya is a 'Dream-come-true' for the tourist. The charms of this land are many-splendoured and unique. It is a happy land of magnificent beauty, undulating hills, rolling grasslands, cascading water-falls, snaking rivers, terraced slopes and thrilling wild life.

Some of the important tourist spots are: (1) Uniam Lake by the side of the Shillong–Guwahati road provides a very fascinating view. Fishing is a great sport over here. (2) Kyllang Rock, about 55 kilometres west of Shillong, is an interesting tourist spot. Rising out of the rolling grassy downs, it is an imposing dome of granite more than 700 feet in height. (3) Nohsngithiang falls at Mawsmai near

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Arms Bozell/BOM/91

Cherrapunjee, overlooking the hazy blue plains of Bangladesh, has an appeal unparalleled in the whole of India. And the Mawsmai caves are full of wonders to the eyes. (4) Nartiang, about 90 kilometres from Shillong, has a number of monoliths, the tallest being 27 feet high and $2^1/_2$ foot thick erected by the villagers of Nartiang between 1500 and 1835 A.D.

Meghalaya has been placed under President's rule on October 11, 1991.

Governor: Madhukar Dighe.

Mizoram

Area: 21,081 sq km; **Capital:** Aizawl; **Languages:** Mizo and English; **Districts:** 3; **Population:** 686,217; **Males:** 356,672; **Females:** 329,545; **Increase in (1981-91):** 192,460; **Growth Rate (per cent) 1981-91:** 38.98; **Density (persons per sq. km.):** 33; **Sex Ratio (females per 1000 males):** 924; **Literacy:** 81.23%; **Males:** 84.06; **Females:** 78.09.

Mizoram, in the local language, means the land of Mizos—Mizo itself means high lander (mipersons and zohills or uplands). Under the British administration, Mizoram was known as Lushai Hills District. In 1954 by an Act of Parliament the name was changed to Mizo Hills District. In 1972, when it was made into a Union Territory, it was named Mizoram.

With the signing of the Peace Accord between the Union government and the MNF and consequent upon the passing of the 53rd Constitution Amendment Bill, Mizoram became the 23rd State of the Indian Union on 20-2-1987.

Physiography: Mizoram occupies the north east corner of India. It is bounded on the north by the District of Cachar (Assam) and the State of Manipur, on the east and south by Chin Hills and Arakan (Burma), on the west by the Chittagong hill tracts of Bangladesh and the State of Tripura.

Mizoram is a land of hills. The hills run in ridges from north to south. They have an average height of 900 metres, the highest point being the Blue Mountain (Peak) in the south which rises to a height of 2165 metres. The hills are steep and cut apart by rivers which have created deep gorges. The terrain, on the whole, is mountainous except for low depressions amid hills, where wet cultivation is practised.

The most important and useful rivers are the Tlawng (or the Dhaleswari), the Sonai and the Tuivawl, which drain the northern area of the territory and eventually join the Barak. The southern area is watered by the Kolodine and its tributaries and the western area by the Karnaphuli with its tributaries. Chittagong in Bangladesh is situated at the mouth of this river.

The valleys are unhealthy during the rainy season, wet and enervating. In the higher areas, the climate is pleasant, generally cool in summer and not very cold in winter. In March-April violent storms from the north west sweep over the hills. The average rainfall between May and September is 254 cm. Aizawl in the north records an annual rainfall of 208 cm while Lunglei in the south records 350 cm.

History: The Mizos belong to the Mongolian race. They seem to have settled at first in the Shan State of Burma. The tribes left Burma and moved westwards into India. They occupied the Lushai Hills.

During the British administration, the Mizos raided British territories and even attacked fortified positions. The British army moved against the Mizos and occupied their territory. It was annexed to British India in 1891. In 1898, the entire Mizo territory was formed into the Lushai Hills District and made a part of Assam. Although the Mizos were subjugated, the British did not interfere with their village administration. The Mizo Chiefs carried on the day-to-day administration in the traditional manner.

With independence, Mizoram became a district of Assam. Because of neglect by the authorities, the Mizos felt that it was a bad bargain for them to continue as part of India and started agitations in 1966. It was declared a disturbed area. Armed Forces (Special Powers) Act also was invoked. On June 30, 1986, the historic Mizoram Peace Accord was signed between the Government of India and the Mizo National Front ending the two-decade old insurgency.

The Mizos are divided into various tribes – the Lushais, Pawis, Paithes, Raltes, Pang, Hmars, Kukis, Maras, Lakhers, etc. In the 19th century the Mizos came under the influence of British missionaries and many Mizos were converted to Christianity.

The Mizo language had no script of its own. The missionaries introduced the Roman script for the Mizo language and started teaching English also. The cumulative result was a high percentage of literacy. The majority of the tribes are Christians and speak Mizo and English. But some tribes on the border like the Chakmas are Buddhists and speak Chakma language.

Universities: NEHU–North Eastern Hill University – has a campus in Aizawl.

Administration: Mizoram has a single-chamber legislature consisting of 40 members. The territory has three Districts, 9 Sub-Divisions, 3 autonomous Hill District Councils, 6 Towns (as per 1981 census), 23 Police Stations and 301 Village Councils (instead of Gram Panchayats).

Districts

District	Area (sq km)	Population (1991)	Head-quarters
Aizal	12,589	475,360	Aizawl
Lunglei	4,536	111,209	Lunglei
Chhimtuipui	3,957	99,648	Chhimtuipui
Total	21,081	686,217	

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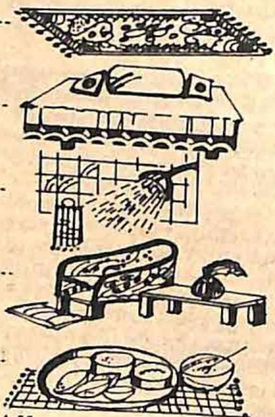

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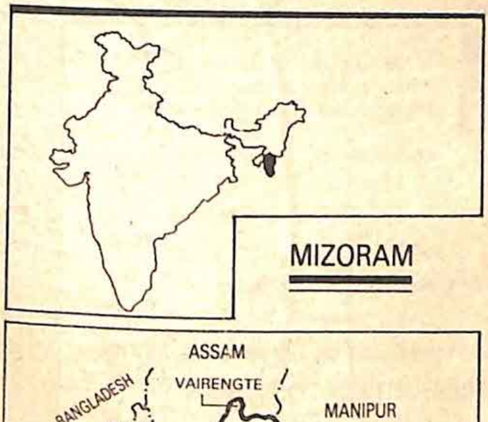

State of Economy: Agriculture is practically the only occupation in Mizoram. The territory is famous for its fibreless ginger, although other cash crops like mustard, sesame and potatoes are also grown. However, the cultivation method – "jhum" – is very primitive and destructive. The Mizoram Government is now trying to induce the peasants to change over to more permanent systems of cultivation like terraced farming on the hill sides. There are also schemes to grow plantation crops like rubber, coffee, tea, etc.

Paddy is the chief food crop, followed by maize. They are grown on the slopes of hills. One of the chief constraints in increasing agricultural production is the lack of irrigational facilities. Only 2885.30 ha is irrigated in Mizoram.

There is no major industry in Mizoram. Handloom and handicraft are the major industrial activities in the territory and one Engineering Unit has developed a new design of machine-combined ginning and carding.

Tailoring, knitting and embroidery centres have been set up.

Sericulture in four kinds of silk, – Mulberry, Eri, Tasar and Muga is practised widely.

Other industries are: Ginger beverages, oil, fruits preservation, handloom and some other small scale & cottage industries like bakery, printing press, saw mills, brick making, soap making, etc.

Tourist Centres: Known as the land of enchanting hills, Mizoram is famous for its vast expanse of jagged mountain ranges shrouded mystically in reddish-blue haze. Blue mountains and deep narrow valleys with swift-flowing rivers, forests with an array of flora and fauna, quaint relics of a glorious past, quiet hamlets and bustling towns make Mizoram a tourist's choice.

Governor: Swaraj Kaushal; **Chief Minister:** Lal Thanhawla.

Nagaland

Area: 16,579 sq km; **Capital:** Kohima; **Languages:** English, Ao, Konyak, Angami, Seema and Lotha; **Districts:** 7; **Population:** 1,215,573; **Males:** 643,273; **Females:** 572,300; **Increase in (1981-91):** 440,643; **Growth Rate (per cent) 1981-91:** 56.86; **Density (persons per sq. km.):** 73; **Sex Ratio (females per 1000 males):** 890; **Literacy:** 61.30%; **Males:** 66.09; **Females:** 55.72; **Per capita:** Rs. 3046 (1985-86).

Physiography: The State of Nagaland is a narrow strip of mountainous territory between the Brahmaputra Valley of Assam and Myanmar (Burma). On the east it shares India's international boundary with Burma. On all other sides it is bounded by Indian territory – Manipur on the south, Assam on the west and north, and Arunachal Pradesh on the north east.

Excepting some area in the foothills, the state is mountainous. Saramati, the highest peak, is 3841 m high and Kohima, the capital, is 1444.12 m above sea level. The main rivers that flow through the state are Dhansiri, Doyang, Dikhu and Jhanji.

The population of Nagaland is almost entirely tribal. There are many separate tribes and subtribes among the Nagas with their own distinctive languages and cultural features. Kohima district is the home of the Angamis, Zeliangs, Rengmas, Kukis, Semas and other minor groups. Mokokchung is the home of Aos, Wokha district of the Lothas and Zunheboto district of the Semas. Tuensang district is the home of the Chang, the Sangtam, the Khemnungan, the Yimchunger, the Phom and other minor groups. Mon district is the home of the Konyaks. It is these people who chiefly practise Jhum cultivation.

History: The Nagaland State comprises the former Naga Hills district of Assam and the former Tuensang Frontier division of the North East Frontier

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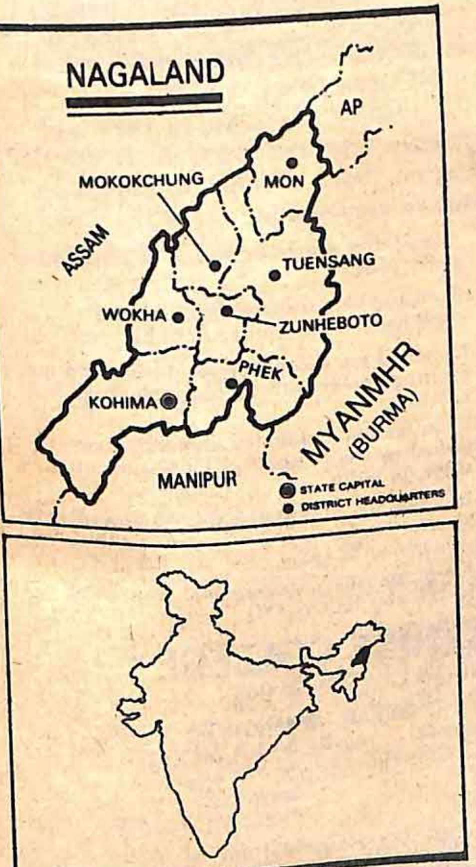
Agency. These had been made a Centrally Administered Area in 1957, administered by the President through the Governor of Assam. In January 1961 the Government of India conferred the status of a State on Nagaland. The State of Nagaland was officially inaugurated on 1st Dec. 1963.

Administration: The State has a unicameral legislature – the Legislative Assembly.

Districts

District	Area (sq km)	Population (1991)	Headquarters
Kohima	4041	394,179	Kohima
Phek	2026	101,823	Phek
Mokokchung	1615	156,207	Mokokchung
Zunheboto	1255	97,933	Zunheboto
Wokha	1628	82,394	Wokha
Tuensang	4228	232,972	Tuensang
Mon	1786	150,065	Mon
Total	16579	1,215,573	



Originally the state was divided into 3 districts. In Dec. 1973, the districts were reconstituted as above.

State of Economy: Agriculture is the main occupation of 90% of the population. Rice is the important food crop grown.

Although agriculture is the mainstay of the state, only a little more than one-third of the total area is cultivable. Considering the hilly terrain, this is not unusual but the main drawback is that cultivation is vitiated by what is called jhumming. Under this system, forest lands are cut down and burnt and crops are planted in the burnt out lands. After a crop or two, these lands are abandoned and fresh forests are cut down and burnt. This leads to soil erosion and permanent loss of fertility of the soil.

But now the Govt. is encouraging terraced cultivation, farm forestry, orchard plantation, cash crop plantation and contour bunding so as to discourage jhum cultivation which leads to soil erosion as well as loss of fertility. These programmes are positively accepted by the people. The area under jhum cultivation is 87,339 hectares and under terraced cultivation 62,091 hectares.

Nagas have an artistic sense in many crafts. They carve beautiful designs with their simple equipments like dao. They use home-made colours and pieces of bamboo to make beautiful decorative materials.

Nagaland has achieved remarkable progress in small and medium industries. Big industries are being planned although at present there is only one sugar mill, one pulp and paper mill and one plywood factory. One cement factory is also coming up.

Among the new industries are plastic moulding, hume pipes, polythene bags and rubber chappals.

University: NEHU–North Eastern Hill University – has campus in Kohima. Though an Act has been made to set up *Nagaland Central University* at Lumani, notification enforcing the Act is yet to be issued.

Tourist Centres: This remote hilly area is covered with luxuriant vegetation, the climate is cool and bracing, the people friendly and hospitable. In season, the landscape is a riot of colour – wild flowers, thick forests, huge trees, tall grass, a wide variety of wild animals and brilliantly coloured birds.

Governor: Dr. M.M. Thomas; **Chief Minister:** Vamuzo (Nagaland People's Council).

Orissa

Area: 155,707 sq km; **Capital:** Bhubaneswar; **Language:** Oriya; **Districts:** 13; **Population:**

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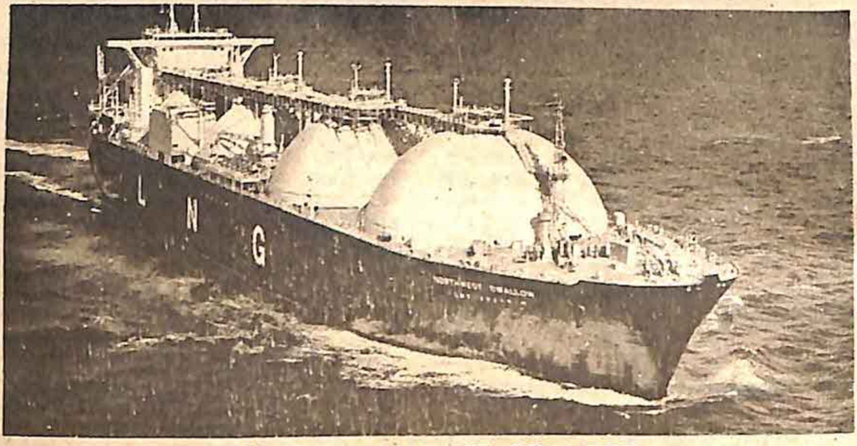

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ARIES

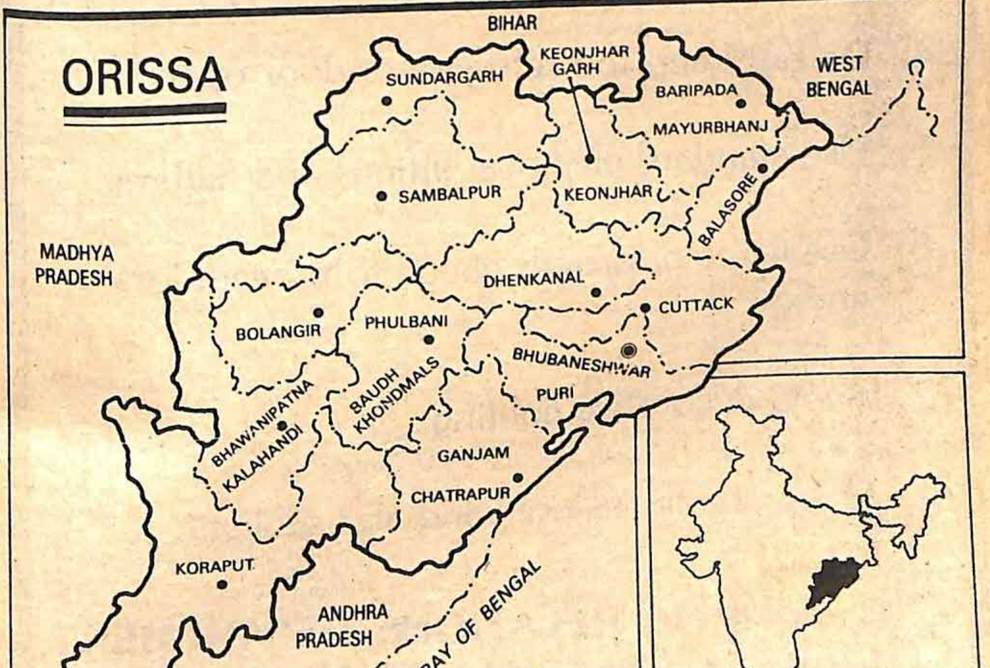
31,512,070; **Males:** 15,979,904; **Females:** 15,532,166; **Increase in (1981-91):** 5,141,799; **Growth Rate (per cent) 1981-91:** 19.50; **Density (persons per sq. km.):** 202; **Sex Ratio (females per 1000 males):** 972; **Literacy:** 48.65%; **Males:** 62.37; **Females:** 34.40; **Per capita:** Rs. 1,534.00 (1984-85).

Physiography: Orissa lies on the east coast of India. It is surrounded by West Bengal on the north-east, Bihar on the north, Andhra Pradesh on the south-east, Madhya Pradesh on the west and Bay of Bengal on the the east. The whole state lies in the tropical zone and is divided into four distinct tracts, viz. the northern plateau, the eastern ghats, the central tract and the coastal plains. The state is drained by three great rivers, the Mahanadi, the Brahmani and the Baitarani and some lesser rivers, all of which flow into the Bay of Bengal.

The biggest and the most famous lake in Orissa is the Chilka lake. Originally, it was part of the Bay of Bengal, but was subsequently closed up by sand dunes. It is 64 km long and 16 to 20 km wide. There are two beautiful islands in the lake namely Parikud and Malud. Two other lakes call for mention, the Ansupa Lake (Cuttack District), about 5 km long and 1.6 km broad, and the Sara Lake, (Puri District) about 5 km long and 3 km wide.

Orissa has an equable climate, neither too hot nor too cold. In some places, however, extremes of climate are experienced, namely, in the western districts like Bolangir, Sambalpur and Sundargarh. The average rainfall in the state is 150 cm. There is no desert or semi-desert area in the state.

History: Orissa, the land of the Oriyas, was known as Kalinga in the ancient days. In the third century B.C. (268 B.C.) Ashoka, the Mauryan emperor, sent a powerful force to conquer Kalinga which offered stiff resistance. Kalinga was subdued but the carnage which followed struck Ashoka with remorse. It is here, where Ashoka "the Terrible" was transformed to Ashoka "the Compassionate". After the death of Ashoka, Kalinga regained its independence. In the second century B.C. Kalinga became a powerful country under its ruler Kharavela. With the death of Kharavela, Orissa passed into obscurity. In the 4th century A.D. Samudragupta set out on his conquest of the south from Magadha. He invaded Orissa, which lay astride his path and overcame the resistance offered by five of its kings. In A.D. 610, Orissa came under the sway of King Sasanka. After



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Sasanka's death Harsha conquered Orissa.

The country had its own independent dynasty of rulers (the Ganga dynasty) in the 7th century A.D. In A.D. 795 Mahasivagupta Yayati the Second came to the throne and with him began the most brilliant epoch in the history of Orissa. He united Kalinga, Kengoda, Utkala and Kosala in the imperial tradition of Kharavela. He is believed to have built the famous Jagannatha Temple at Puri. Under the kings of the Ganga dynasty, Orissa continued to flourish. Narasingha Dev of this dynasty is reputed to have built the unique temple of the Sun at Konarak.

From the 14th century, Orissa was ruled by successive Muslim Kings till 1592 when Akbar annexed it to the Mughal Empire. With the decline of the Mughals, the Marathas occupied Orissa. They continued to hold it till the British took over in 1803.

Orissa was made into a separate province in 1936. With independence, the Princely states in and around Orissa, surrendered their sovereignty to the Government of India. By the States Merger (Governor's Provinces) Order 1949, the Princely States of Orissa were completely merged with the State of Orissa on 19th August, 1949.

Administration: The legislature is unicameral—the Legislative Assembly consisting of 147 members.

The state is divided into 3 revenue divisions. Central, Northern and Southern and 23 districts.

Districts*

District	Area sq km	Population '91	Headquarters
Baleshwar	6,394	2,796,321	Baleshwar
Phulbani	11,070	858,553	Phulbani
Balangir	8,903	1,703,755	Balangir
Cuttack	11,211	5,503,307	Cuttack
Dhenkanal	10,826	1,900,675	Dhenkanal
Ganjam	12,527	3,143,120	Chhatrapur
Kalahandi	11,835	1,591,984	Bhawanipatna
Kendujhar	8,240	1,315,627	Kendujhar
Koraput	27,020	2,999,903	Koraput
Mayurbhanj	10,412	1,871,796	Baripada
Puri	10,159	3,570,192	Puri
Sambalpur	17,570	2,688,395	Sambalpur
Sundargarh	9,675	1,568,442	Sundargarh
Total		31,512,070	

* 1991 census is taken on the basis of 13 districts.

The 10 new districts announced on September 18, 1990 are:

Kendrapada
Jaipur
Bargarh (old Hirakhand)
Jaypore
Bhubaneswar
Angul
Bamanda (old Deogarh)
Nuapada
Gajapati
Bhadrak

Orissa has a high percentage of Scheduled Castes and Tribes which together make 9.78 million out of a total of 26.37 million people.

State of Economy: Orissa's agro-based economy is always upset by some natural calamities like flood, drought, tornado or cyclone. Flood and drought are common to many states but only a few states are subject to cyclones and tornado. Orissa is one of the few. Cyclone has in recent years become a regular feature like flood or drought. In 1980 an unprecedented flood caused untold miseries to the people in nine districts of the state.

Over 76% of the people are dependent on agriculture. Out of the gross cropped area of 87.46 lakh hectares, 18.79 lakh hectares are irrigated. Rice, pulses, oil-seeds, jute, mesta, sugarcane, coconut and turmeric are important crops. The state contributes about one-tenth of the rice production in India.

Orissa's vast mineral, marine and forest resources provide adequate opportunities for industries. One hundred and seventy large and medium industries went into production by the end of 1986. More than 9,000 small scale industries with an investment of Rs. 7,178.86 lakh with employment potential of 64,798 persons and 542,000-artisan based industries were also established.

The Central Sector Projects are: Steel Plant at Rourkela, SAD Complex at Chhatrapur, Heavy Water Project at Talcher, Coach Repairing Workshop at Mancheswar, Aluminium Complex at Koraput, Captive Power plant at Talcher, Aluminium Smelter at Talcher and Fertilizer Plant at Paradeep.

Universities: Berhampur University, Behrampur; Orissa University of Agri. & Tech.; Bhuvaneswar; Sambalpur University, Sambalpur; Sri Jagannath Sanskrit Vishwa Vidyalaya, Puri; Utkal University, Bhuvaneswar.

Tourist Centres: Bhubaneswar, the present capital of Orissa is known as the cathedral city of India on account of its numerous temples. A complete study of the "Kalinga Style" of architecture from its every inception to maturity spread over a period of about two thousand years is epitomised in the monuments of Bhubaneswar. Places of interest are: Lingaraja Temple, Mukheswar Temple, Ananta Basudeva Temple and Rajarani Temple, the Jain and Buddhist rock-cut caves of Khandagiri, Udayagiri and Dhauli together with Ashoka's rock edict.

Bhubaneswar is connected to Calcutta and Vizag by daily flights and New Delhi by triweekly Boeing flights. Also there are express trains to Delhi, Calcutta, Madras and Secunderabad and buses to Calcutta, Vizag, Raipur, Ranchi and Tatanagar.

Puri (Jagannath Puri) is a coastal town and beach-resort in Orissa. It is 62 km from Bhubaneswar and is one of the four dhamas (holy places of pilgrimage) in India—the three others being Badri-Kedarnath in the north, Rameswaram in the south and Dwaraka in the west. The presiding deities in the temple are Jagannath Balabhadra and Subhadra. Every year, in June-July (Asadha Sukla Dwitiya), thousands of devotees from all over India and abroad arrive at Puri to participate in the Car-Festival.

Konark is about 65 km from Bhubaneswar and

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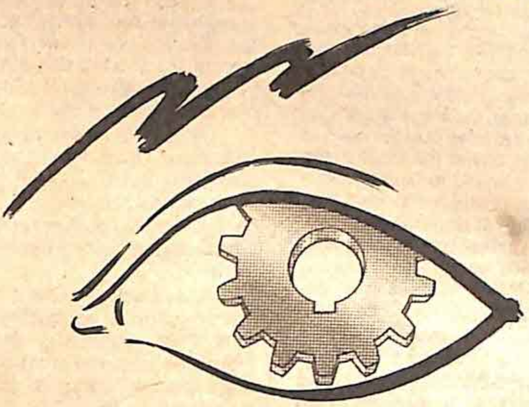

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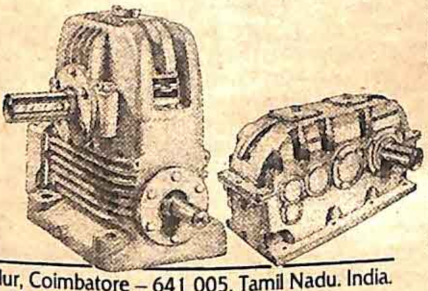

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85 km from Puri. It is famous for the great temple of the Sun-God, conceived as a giant celestial chariot with twenty-four exquisitely carved wheels, drawn by seven impetuous horses. The temple is profusely sculptured with exquisite figures and figurines, fixed by an astonishing energy, trapped in stone. Hirakud Dam, the fourth largest in the world, on Mahanadi, 328 km from Bhubaneswar is another tourist attraction.

Governor: Yagya Dutt Sharma; **Chief Minister:** Biju Patnaik (Janata Dal).

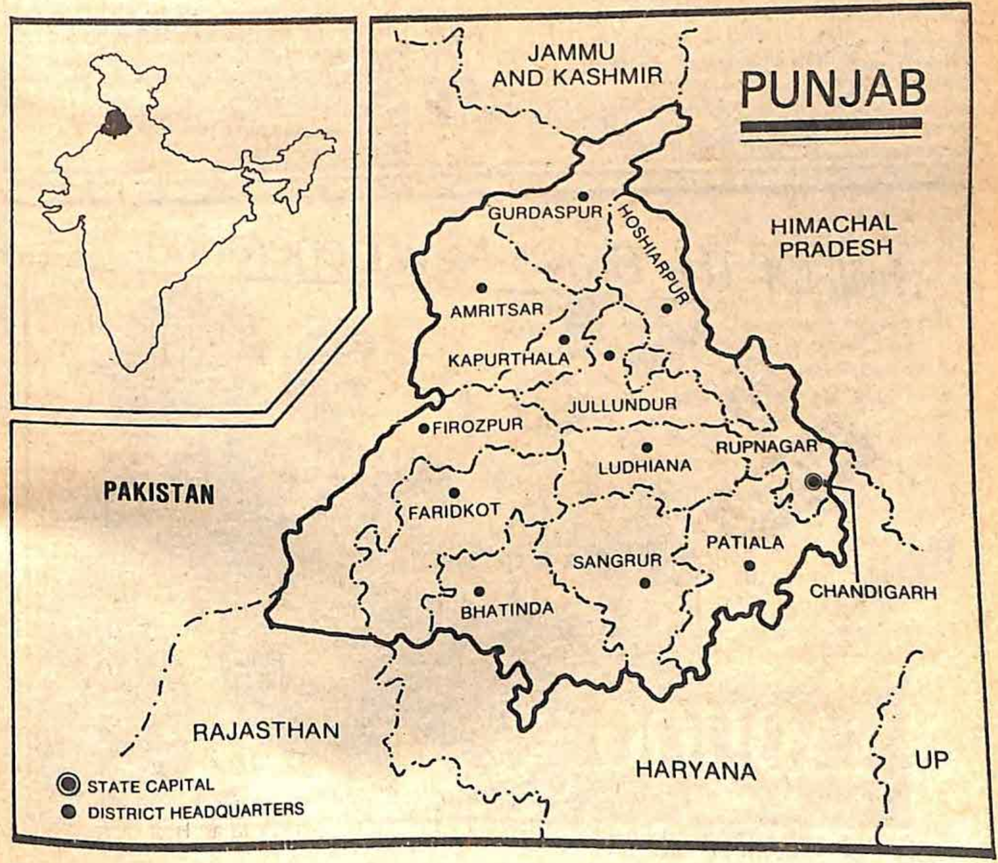
Punjab

Area: 50,362 sq km; **Capital:** Chandigarh; **Language:** Punjabi; **Districts:** 12; **Population:** 20,190,795; **Males:** 10,695,136; **Females:** 9,495,659; **Increase in (1981-91):** 3,401,880; **Growth Rate (per cent) 1981-91:** 20.26; **Density (persons per sq. km.):** 401; **Sex Ratio (females per 1000 males):** 888; **Literacy:** 57.14%; **Males:** 63.68; **Females:** 49.72; **Per capita:**——.

Physiography: Punjab is bounded on the west by Pakistan, on the north by Jammu and Kashmir, on the north east by Himachal Pradesh and on the south by Haryana and Rajasthan. Physically, the state may be divided into two parts, sub-Shivalik strip and Sutlej-Ghaggar Plain. The sub-Shivalik strip covers the upper portion of Ropar, Hoshiarpur and Gurdaspur districts.

The Sutlej-Ghaggar Plain embraces the other districts of the Punjab. The land is highly fertile as they are formed by the tributaries of the Indus, Ravi, Beas, Sutlej and the river Ghaggar.

History: The word "Punjab" is made up of two Persian words 'Panj' and 'Aab', Panj means five and Aab means water. This name was probably given to this land of five rivers possibly in an era when this region came into close contact with Persia. Prior to that period this region was known by different names



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at different times. Probably, when at the height of its glory it was known as Sapta Sindhu, the land of the 'seven rivers, namely Sindhu (Indus), Vitasta (Jehlum), Asuhi (Chenab), Purushin (Ravi), Vipasa (Beas), Satadru (Sutlej) and Saruri (Sarasvati). The last one is a dried up stream now and its traces, according to geologists, are found in the present seasonal streams that flow near Pehowa in Haryana. During the Greek occupation, the territory had shrunk into the area covering the five rivers.

Punjab lies in the north west of India. Being in the way of invaders from the north, Punjab has had to take a lot of battle ring from the invaders. Punjab emerges into history with the coming of the Aryans into India. The Aryans in the early Vedic age apparently settled in the Punjab and its neighbourhood. In 522 B.C. Darius of Persia conquered the territories around the Punjab and made them a Satrapy of Persia. In 326 B.C., Alexander the Great overran the Punjab. For a time, Mecedonian governors controlled the Punjab but they were defeated by Chandragupta Maurya, who annexed the entire territory. With the decline of the Mauryan empire the Scythians occupied north west India and after them, the Parthians. The Kushans came next. Thereafter the Punjab continued under indigenous rulers.

From the tenth century A.D. began a series of Muslim invasions culminating with Babar, the founder of the Mughal Empire. With the decline of the Mughal empire two other Muslim invaders crossed into India, Nadir Shah in 1738 and Ahmed Shah Abdali in 1748, 1750 and 1751. Punjab had the worst of all these invasions.

The Sikh faith, which played a decisive role in the creation of a Punjabi-speaking state, came into being during a period of religious revival in the 15th and 16th centuries. It was founded as a new religious order by Guru Nanak. He was followed by nine Gurus. The subsequent 200 years witnessed the growth of Sikhism and its transformation into a militant organization.

Guru Angad developed Gurumukhi script by combining the scripts current in north India at that time. Guru Ram Das laid the foundation of the city of Amritsar. Guru Arjun Dev compiled the Adi Granth. His son Guru Har Gobind started training his followers in the military art.

Punjab was annexed to British India by Lord Dalhousie in March, 1849. But the spirit of the Punjab remained unvanquished. Through the centuries Punjab became the sword arm of British India.

The Punjab was constituted a separate province of India in 1937. With the partition of India, the Punjab was divided between India and Pakistan as East Punjab and West Punjab. On Nov. 1, 1956 the Princely States adjoining Punjab were formally absorbed into the Punjab State. On Nov. 1, 1966, Punjab was divided into three units—Punjab comprising the predominantly Punjabi-speaking areas, Haryana made up of the Hindi-speaking districts and Kharar tehsil and Chandigarh the Capital. Hilly areas were transferred to Himachal Pradesh.

Administration: The Legislature is unicameral—the Legislative Assembly. The state is divided into 12 districts.

Districts

District	Area in sq km	Population (1991)	Headquarters
Amritsar	5,087	2,501,731	Amritsar
Bhatinda	5,551	1,554,948	Bhatinda
Faridkot	5,740	1,725,212	Faridkot
Ferozepur	5,874	1,599,501	Ferozepur
Gurdaspur	3,562	1,765,834	Gurdaspur
Hoshiarpur	3,881	1,430,210	Hoshiarpur
Jalandhar	3,401	2,033,994	Jalandhar
Kapurthala	1,633	641,884	Kapurthala
Ludhiana	3,857	2,425,868	Ludhiana
Patiala	4,584	1,904,321	Patiala
Sangrur	5,107	1,701,663	Sangrur
Ropar	2,085	905,629	Ropar

State of Economy: Punjab is primarily an agrarian state and agriculture occupies the most prominent place in Punjab's economy. About 70 per cent of the people are engaged in agriculture. As against an all India average of 51 per cent, it has 85 per cent of its area under cultivation. The fertilizer consumption in Punjab is the highest in India. The efforts of the state government to provide irrigation facilities, cheap power and agriculture inputs at subsidised rates have acted as a catalyst for agriculture production. Total production of foodgrains rose from 147.77 m tonnes in 1983-84 to 154.50 m tonnes in 1984-85.

Agriculture production is now nearing the saturation point. Punjab's contribution is highest in the procurement of foodgrains for the central pool.

As many as 146,472 small scale industrial units are registered in the state April 1990 as compared to 122,410 in 1986 and 135,305 in 1987-88. These units have given employment to 6,36,000 persons and produce goods to the value of Rs. 1215 crore.

The chief manufactures are textiles, sewing machines, sports goods, sugar, starch, fertilizers, bicycles, scientific instruments, electrical goods, machine tools and pine oil.

Large scale industries are 355. 1,62,000 persons are employed in large scale industry.

Universities: Punjab Agl. University, Ludhiana; Punjab University, Patiala, Guru Nanak Dev University, Amritsar, Thapar Inst. of Engg. and Tech., Patiala.

Tourist Centres: Punjab is dotted with places of historical and cultural interest. Ropar, one of the centres of Indus Valley civilization, Amritsar, the city of the Golden Temple, sacred to the Sikhs, the ancient fort of Bhatinda, the architectural monuments of Kapurthala, the City of Gardens, Patiala and Chandigarh the capital designed by the French

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architect Le Corbusier are among the leading tourist attractions of the state.

Punjab is under President's rule since early 1987.

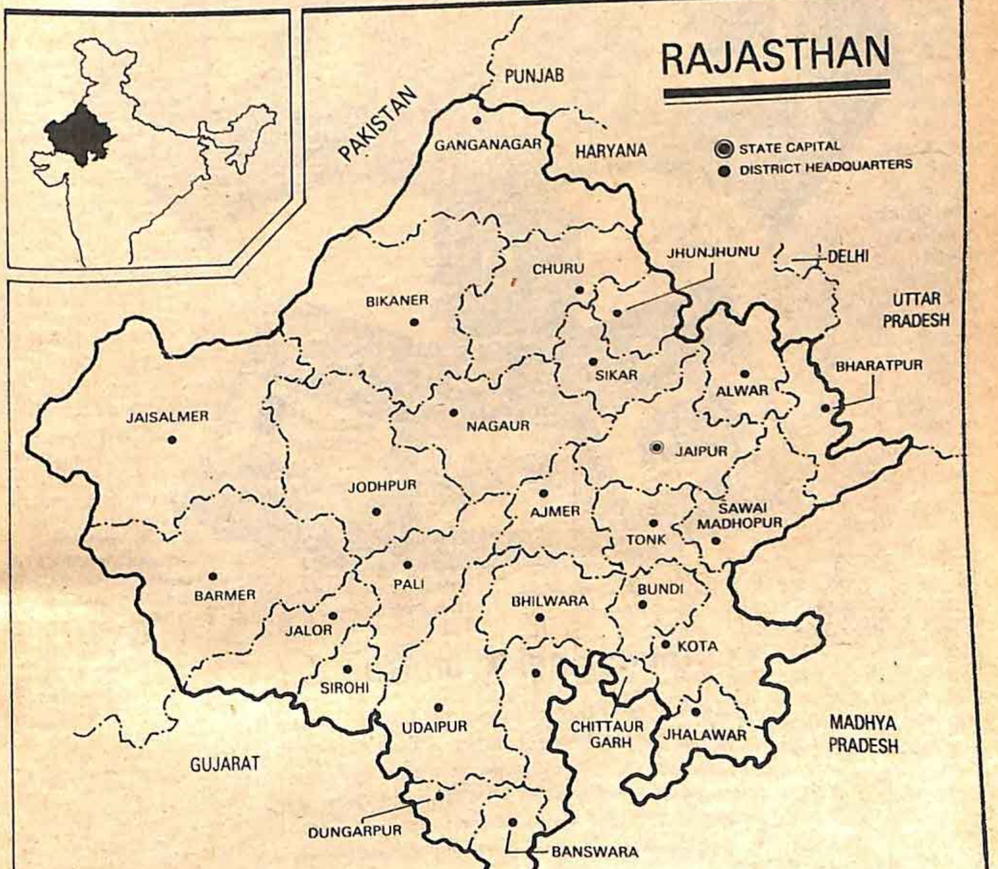
Governor: Surendranath.

Rajasthan

Area: 342,239 sq km; **Capital:** Jaipur; **Languages:** Hindi and Rajasthani; **Districts:** 30; **Population:** 43,880,640; **Males:** 22,935,895; **Females:** 20,944,745; **Increase in (1981-91):** 9,618,778; **Growth Rate (per cent) 1981-91:** 28.07; **Density (persons per sq. km.):** 128; **Sex Ratio (females per 1000 males):** 913; **Literacy:** 38.81%; **Males:** 55.07; **Females:** 20.84; **Per capita:** Rs. 2938 (current prices).

Rajasthan is one of the border states of India, sharing India's frontier with Pakistan on the west and northwest. Punjab bounds it on the north, Haryana and Uttar Pradesh on the north-east and east, Madhya Pradesh on the south and south-east and Gujarat on the south-west.

Physiography: Rajasthan is one of the few states of India that show great contrast from one area to another. This disparity is noticeable in respect of climate, soil, vegetation, mineral resources, etc. However, the state may be divided into 6 regions. (1) Western arid region, (2) Semi-arid region, (3) South eastern region, (4) Chambal ravines, (5) Aravalli region and (6) Eastern region.



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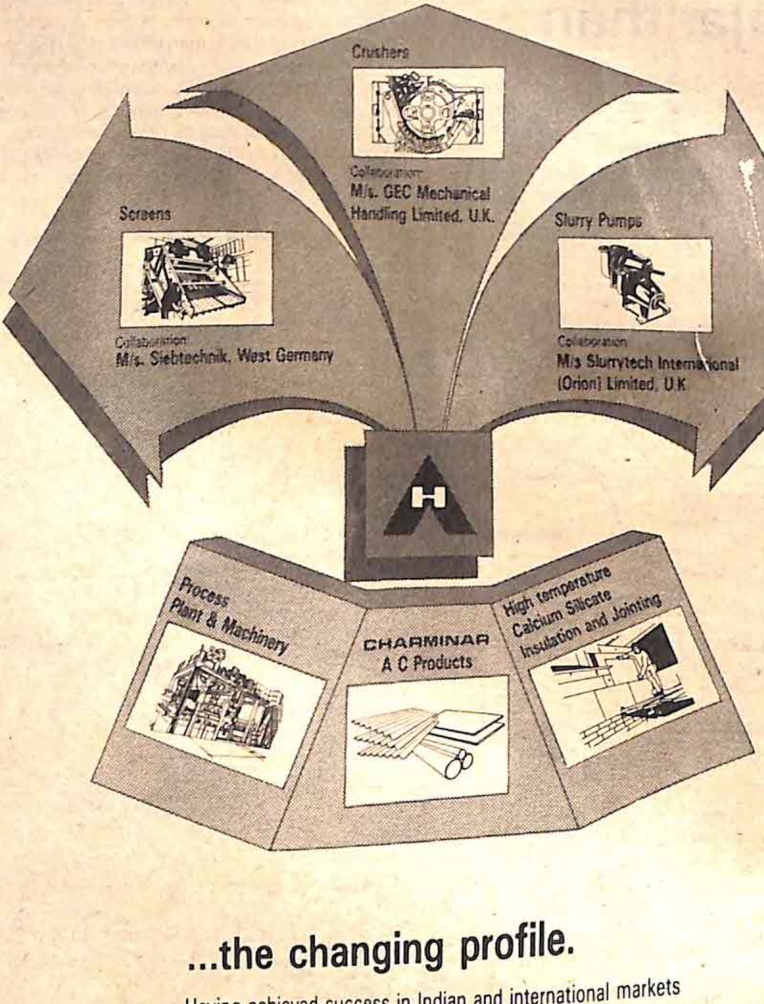
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The western arid region covers the whole of Jaisalmer district, north-western part of Barmer and Jodhpur, south-east Bikaner, south western Churu and western part of Nagaur. This region is characterized by typical desert conditions and forms the largest region in the state.

The semi-arid region lying west of the Aravalli ranges covers the districts of Jalore, Pali, south-eastern Jodhpur and Nagaur, Sikar, Jhunjhunu and north-eastern part of Churu. The southern part of this area is watered by the Luni river while the northern part is an area of inferior drainage.

The Rajasthan canal (named as Indira Gandhi Canal) passes through the north-west portion of this region irrigating at present Ganganagar district and the north western part of Bikaner district.

The Aravalli region covers almost the whole of Udaipur, south eastern part of Pali and Sirohi and the western part of Dungarpur districts. The area is dominated by the mountains of the Aravalli range and outlying hills.

The eastern region comprises the districts of Jaipur, Ajmer, Sawai, Madhopur, Bhilwara, Bundi, Alwar, Bharatpur and north-western part of Kota. It is mainly drained by the Banas river and its tributaries. This region has the largest number of industries, located mainly at Jaipur, Ajmer, Kota, Bhilwara and Shahpura.

The south-eastern region embraces the districts of Banswara, Chittorgarh, Jhalawar and Kota. The Kota-Jhalawar area consists of stony uplands but the Chambal river and its tributaries have formed an alluvial basin in Kota.

The Chambal ravine region lies along the river Chambal, where it forms the boundary between Rajasthan and Madhya Pradesh.

History: The State of Rajasthan is an amalgam mainly made up of the old princely states of Rajasthan. It took some eight years for the state to come into its present shape. The first step towards the formation of this state was taken on March 17, 1948 with the formation of the Matsya Union, a Union of four princely states, Alwar, Bharatpur, Dholpur and Karauli. The second step came with the formation of Rajasthan, a Union of 9 states-Banswara, Bundi, Dungarpur, Jhalawar, Kishangarh, Kota, Pratapgarh, Shahpura and Tonk on March 25, 1948. The state of Udaipur joined this union on April 18, 1948, thus transforming the Union into the United States of Rajasthan,

The next two important steps were taken in 1949, the first on March 30, 1949 when the four large princely states of Bikaner, Jaipur, Jaisalmer and Jodhpur joined the United States of Rajasthan and the second on April 25, 1949 when the Matsya Union joined up. The new union was known as the United States of Greater Rajasthan. The Union of Greater Rajasthan was further enlarged by the accession to it of the state of Sirohi on Jan. 25, 1950. The final step was taken when the state of Ajmer, the tehsil of Abu and the area of Sunel Tuppa were integrated with Greater Rajasthan on Nov. 1, 1956, to be known simply as Rajasthan.

Administration: The legislature is unicameral—the Legislative Assembly. The state is divided into 30 districts, 87 sub-districts and 211 tehsils.

Districts

District	Population 1991	Area (sq km)	Headquarters
Ajmer	1,723,081	8,479	Ajmer
Alwar	2,286,701	8,382	Alwar
Banswara	1,154,964	5,037	Banswara
Barmer	1,433,351	28,387	Barmer
Bharatpur	1,646,501	8,093	Bharatpur
Bhilwara	1,591,236	10,450	Bhilwara
Bikaner	1,209,107	27,231	Bikaner
Bundi	768,150	5,550	Bundi
Chittorgarh	1,482,267	10,858	Chittorgarh
Churu	1,539,470	16,829	Churu
Dungarpur	874,329	3,770	Dungarpur
Ganganagar	2,618,914	20,629	Ganganagar
Jaipur	4,719,257	14,068	Jaipur
Jaisalmer	343,648	38,401	Jaisalmer
Jalore	1,141,604	10,640	Jalore
Jhalawar	955,510	6,216	Jhalawar
Jhunjhunu	1,565,488	5,929	Jhunjhunu
Jodhpur	2,127,552	22,850	Jodhpur
Kota	2,027,375	12,437	Kota
Nagaur	2,137,258	17,718	Nagaur
Pali	1,484,691	12,391	Pali
S. Madhopur	1,953,807	10,593	S. Madhopur
Sikar	1,836,572	7,732	Sikar
Sirohi	653,324	5,135	Sirohi
Tonk	973,118	7,200	Tonk
Udaipur	2,885,039	17,267	Udaipur
Dholpur	748,326	3,000	Dholpur
Baran	—	—	—
Dausa	—	—	—
Raj Samand	—	—	—

Note: The 1991 census was taken on the basis of old divisions.

State of Economy: The principal crops are jowar, bajra, maize, wheat, grams, oil-seeds, cotton, sugarcane and tobacco. A deficit state in foodgrains in the pre-independence years, the state achieved an all-time high in farm yield in 1967-68 (66 lakh tonnes). This abundance was followed by two years of want and unprecedented scarcity which shattered the economy of the state. Food grains production in 1990-91 was 108.68 lakh tonnes.

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Rajasthan handicrafts are famous all over the world. Important handicrafts are marble work, woollen carpets, jewellery, embroidery, articles of leather, pottery and brass embossing.

Universities: University of Rajasthan, Jaipur; Ajmer University, Ajmer; Banasthali Vidyapith, Banasthali; Birla Institute of Tech. & Science, Pilani; University of Jodhpur, Jodhpur; Kota Open University, Kota; Mohanlal Sukhadia University, Udaipur; Rajasthan Agricultural University, Bikaner; Rajasthan Vidyapith, Udaipur.

Tourist Centres: Rajasthan has several sights to offer the tourist, especially in ancient and medieval architecture. Places of interest are Mount Abu, Ajmer, Alwar, Bharatpur, Bikaner, Jaipur, Jodhpur, Udaipur, Pali, Jaisalmer and Chittorgarh. In the year 1987-88 nearly 3.48 lakh foreign tourists and 84.24 lakh home tourists visited Rajasthan.

Governor: Dr. Swaroop Singh; **Chief Minister:** Bhairon Singh Shekhawat (BJP).

Sikkim

Area: 7,096 sq km; **Capital:** Gangtok; **Languages:** Lepcha, Bhutia, Hindi, Nepali, Limbu; **Districts:** 4; **Population:** 403,612; **Males:** 214,723; **Females:** 188,889; **Increase (1981-'91):** 87,227; **Growth Rate (per cent) 1981-'91:** 27.57; **Density (persons per sq km.:** 57; **Sex Ratio (Females per 1,000 Males) :** 880; **Literacy:** 56.53; **Males:** 64.34; **Females:** 47.23; **Per capita:** Rs. 1300.00 (1983–84).

Sikkim, the 22nd state of the Indian Union, is a small mountain state in the eastern Himalayas. It is bounded by Tibet on the north, Nepal on the west and Bhutan on the east, West Bengal lies to its south. It is the least populous state in the Union. Sikkim is strategically important for India. It lies astride the shortest route from India to Tibet.

Sikkim became a state of the Indian Union under the Constitution (Thirty-eighth Amendment) Act, 1975, which came into force with restrospective effect from 26th April, 1975, when the amending bill was originally passed by both Houses of Parliament.

Physiography: The state is entirely mountainous. About a third of the land is covered with dense forests, where sal, simbal, bamboo and other plants thrive. Some of the finest forests lie in the northernmost areas in Lachen and Lachung. Here the mountains rise to elevations of 7000 metres and more. Kanchenjunga (8579 m), the world's third highest peak, rises from this area. The forests here are inaccessible and remain for the most part unexploited.

On an average, Sikkim receives 125 cm rain. But the rainfall varies widely between various regions like sheltered valleys, foothills and high mountains. River Tista and its tributaries drain the state. Tista is a perennial river being both rain-fed and snow-fed.

Sikkim boasts of several hundred different kinds of orchids and is frequently referred to as a botanist's paradise.

The population of Sikkim is mainly made up of the Lepchas, the Bhutias and their allied clans and the Nepalese.

The Lepchas, who are believed to have come from Assam were the first settlers in Sikkim. The Bhutias came from Tibet in the 14th century. The Tsongs are a minority community. In the 18th and 19th centuries the Nepalese came into Sikkim and established themselves. And, today, they form the majority community in the state.

Administration: The state has a unicameral legislature.

Sikkim is divided into four districts.

Districts

District	Area (sq km)	Population (1991)	Headquarters
East	954	176,145	Gangtok
North	4,226	31,143	Mangan
South	750	99,496	Namchi
West	1,166	96,828	Gyalshing

State of Economy: The state's economy is basically agrarian. The principal crops are maize, paddy, millet, wheat and barley, orange and cardamom are the main cash crops. Sikim has the largest area and the highest production of large cardamom in India. Other imporant crops are potatoes, apples and buck-wheat. Already three Five Year Plans have been put through. The states annual plan for 1990-91 has on outlay of Rs. 73 crore.

The government has set up 11 regional centres and 14 sub-regional centres for agricultural development. A number of high yielding seeds suitable to local climatic conditions have been developed. Campaigns for amendment of acidic soil and micronutrient application have also recorded significant progress.

The complex of Indian Council for Agricultural Research, set up at Tadong, is doing useful work.

Sikkim's tea estate at Temi and Kewzing extends over an area of 200 ha. Tea is exported to USSR and West Germany. A coffee plantation has also been started at Majitar on an experimental basis with commendable results.

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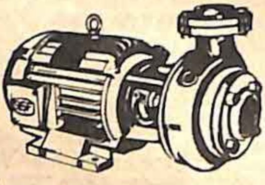

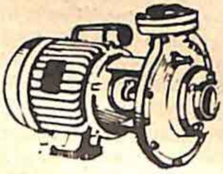

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Sikkim has been declared industrially backward. The main industrial units are the Food Preservation Factory at Singtam, Sikkim Tanneries Ltd. at Majitar, Sikkim Flour Mills at Tadong, Sikim Distilleries at Rongpo, HMT watch assembly unit, Sikkim Time Corporation and Yoksum Breweries.

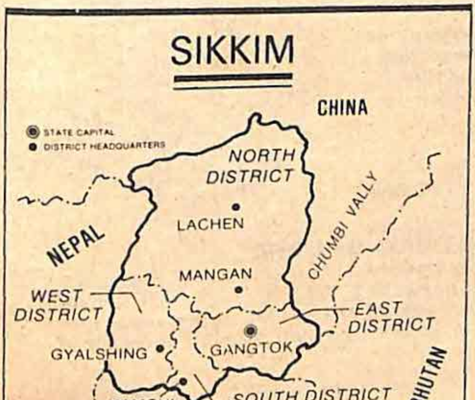
A multi-purpose Industrial Development and Investment Corporation also has been established.

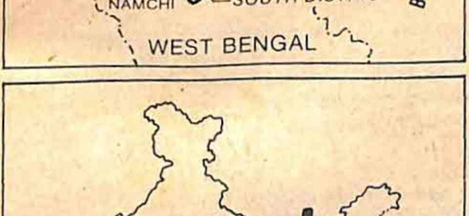
The Rs. 50-lakh Roller Flour Mill set up at Tadong added an extruder food processing plant in 1983 to produce food of higher nutritive value for school children under a programme sponsored by UNICEF.

Tourist Centres: Some of the important tourist centres are: Gangtok, Bakkhim – a natural garden, Yoksum – meeting of three great lamas, Dhubdi monastery, Tashing Monastery, Rumtek monastery, etc.

A 78-bed tourist hotel at Gangtok, a 50-bed tourist lodge at Pemayangtse in West Sikkim and a guest house at Rongpo have been constructed.

With the opening of a Tourist Information Centre in Siliguri (West Bengal), tourists have no longer to go to Darjeeling for getting permits for visiting Sikkim.





Governor: Admiral R.H. Tahiliani (Rtd.); **Chief Minister:** Nar Bahadur Bhandari (Sikkim Sangram Parishad).

Tamil Nadu

Area: 130,058 sq km; **Capital:** Madras; **Language:** Tamil; **Districts:** 22; **Population:** 55,638,318; **Males:** 28,217,947; **Females:** 27,420,371; **Increase in (1981-91):** 7,230,241; **Growth Rate (per cent) 1981-91:** 14.94; **Density (persons per sq. km.):** 428; **Sex Ratio (females per 1000 males):** 972; **Literacy:** 63.72%; **Males:** 74.88; **Females:** 52.29; **Per capita:** 3593.

Tamil Nadu is situated on the south eastern side of the Indian peninsula. It is bounded on the east by the Bay of Bengal, in the south by the Indian ocean, in the west by the Arabian Sea and the States of Kerala and Karnataka and in the north by Karnataka and Andhra Pradesh. It is the eleventh largest state in India and occupies 4 per cent of the country's total area.

Physiography: The land mass of the state can be divided into two natural divisions; (i) the eastern coastal plain and (ii) the hilly region along the north and the west. The coastal plain is usually subdivided into (a) the Coromandel plain comprising the districts of Chengai Anna, South Arcot and North Arcot Ambedkar (b) the alluvial plain of the Kaveri delta extending over Thanjavur and part of Tiruchirapalli districts and (c) the dry, southern plains in Madurai, Ramanathapuram, Kamarajar, Dindigul, Quaid-E-Millat, Kanyakumari, Pasumpon Thevar Thirumagan and Tirunelveli Kattabomman Districts.

Along the whole length of the western part, at a distance from the sea varying from 80 to 160 km runs the range of the Western Ghats, a steep and rugged mass averaging 1220 metres above the sea level and rising to 2440 metres at the highest point. The Palghat Gap about 25 km in width is the only marked break in the great mountain wall. To the south of this gap, the range is known as Anamalai (Elephant Hills).

On the east are the Palani Hills on which is situated the famous hill station Kodaikanal. The slopes of the Western Ghats are covered with heavy evergreen forests. These slopes are the sources of the rivers Kaveri, Vaigai and Tamaraparni. The Nilgiris and the Anamalai are the hill groups with the maximum height.

In the famous Ootacamund area of the Nilgiris District, is the highest peak Doddabetta, 2640 metres above the sea level. The so-called Eastern Ghats begin in Orissa and pass through Ganjam district of Orissa and run south west through all the districts lying between Ganjam and Nilgiris plateau.

The rivers of the state flow eastward from the

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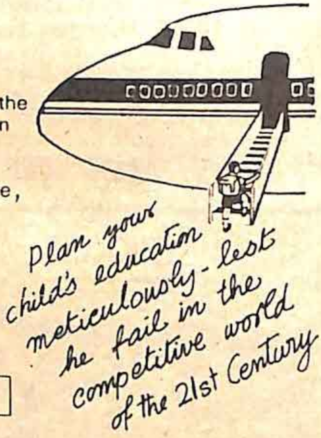
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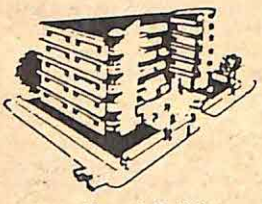

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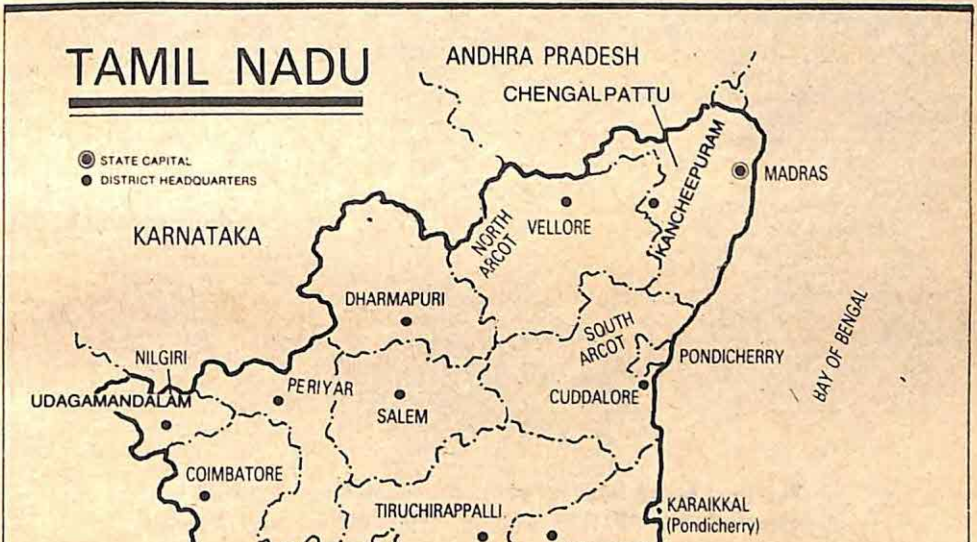
western ghats and are entirely rain-fed. The perennial rivers are:- Palar, Cheyyar, Ponnaiyar, Kaveri, Meyar, Bhavani, Amaravati, Vaigai, Chittar and Tamaraparni. The non-perennial rivers are the Vellar, Noyil, Siruliar, Gundar, Vaipar, Valparai and Varshali. The 760-km-long Kaveri is the great river of the state. Rising on Brahmagiri, a hill in Coorg in the Western Ghats, almost near the Arabian Sea, it travels the entire breadth of the peninsula and forms a large delta at its mouth in the Thanjavur District before flowing into the Bay of Bengal.

History: Tamil Nadu has a very ancient history that goes back some 6000 years. The state represents the nucleus of Dravidian culture in India, which antedated the Aryan culture in India by almost a thousand years. It is generally held that the architects of the Indus Valley Civilizations of the 4th millennium B.C. were Dravidians and that at a time anterior to the Aryans, they were spread over the whole of India. With the coming of the Aryans into North India, the Dravidians appear to have been pushed into the south, where they have remained confined. Tamil Nadu, with the other southern states Andhra Pradesh, Karnataka and Kerala, today form



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the repositories of the Dravidian Culture.

The Dravida country of which modern Tamil Nadu formed a part, was reputedly under three dynasties, Chola, Pandya and Chera from the 4th century B.C. The Cholas occupied the present Thanjavur and Tiruchirappalli Districts and surrounding territories and excelled in military exploits. In the 2nd century B.C. a Chola Prince, Elara, conquered Ceylon (Sri Lanka). The Pandyas excelled in trade and learning. They controlled the districts of Madurai and Tirunelveli and part of South Kerala. A Pandiyan King sent an ambassador to the Roman Emperor Augustus in the first century B.C, The Cheras were powerful on the west coast in what is, today, Central and North Kerala.

The Pallavas of Kanchi rose to prominence in the 4th century A.D. and dominated the south for another 400 years. In the sixth century they overran the Chola dominions and carried their arms as far as Ceylon (Sri Lanka). The famous Alvars and Nayanars, sage-poets, flourished during the Pallava era. In the 9th century the last of the Pallavas was defeated by the Cholas who again became a great power in the south.

in the 13th century the Pandyas became dominant. Their kingdom was a great centre of international trade. The rise of Vijayanagar spelt the decline of the Pandyas. They were ultimately defeated by Vijayanagar, and their territories were annexed to the Vijayanagar Empire. With the disintegration of the Vijayanagar Empire, Tamil Nadu was parcelled out among several petty kings.

The rise of Muslim power in India has had its impact on Tamil Nadu, but by and large, Tamil Nadu remained unaffected by the political convulsions in north and central India. With the establishment of the East India Company at Madras in 1639, a new chapter was opened in the history of Tamil Nadu. Slowly but steadily, the whole of Tamil Nadu and most of South India came under British sway.

When India became free, the old Madras province, comprising Tamil Nadu and Andhra Pradesh and part of Kerala continued as the state of Madras. But the agitation for a separate Andhra state compelled the Government of India to bifurcate the State into two separate States. Andhra Pradesh to include the Telugu-speaking areas and Madras, the Tamil speaking areas. The old capital Madras City was retained by the new Madras State.

Under the States Reorganization Act 1956, Madras lost the Malabar District and the Kasargod taluk of S. Kanara District to the newly formed state, Kerala, while Madras gained four taluks of the Trivandrum District and Shencotta taluk of the Quilon District from Kerala. The four taluks thus gained were constituted into a new district of Madras as the Kanyakumari District. The new Mysore-State (Karnataka) absorbed some parts of the old S. Kanara District (excluding Kasargod taluk) and the Kollegal taluk of the Coimbatore District. In April 1960, 405 sq miles of Chittoor District in Andhra Pradesh was transferred to Madras in exchange for 326 sq miles from Chengalpattu and Salem Districts.

On Jan. 14, 1969, Madras State changed its name to Tamil Nadu. However, the capital city is still known by its old name, Madras.

Administration: The legislature consists of one house—the Legislative Assembly, The Legislative Council was abolished in 1986.

The state is divided into 22 districts..

Districts

District	Area (sq km)	Population 1991	Head-quarters
Chengai-MGR	7,920	4,620,967	Kancheepuram
Coimbatore	10,873	3,531,078	Coimbatore
Dharmapuri	9,643	2,395,606	Dharmapuri
Kanyakumari	1,684	1,591,174	Nagercoil
Madras	128	3,795,028	Madras
Madurai	6,558	3,447,595	Madurai
Dindigul -Anna	5,836	1,768,679	Dindigul Quaid-E-Millat
Nagapattinam Quaid E Millat*	–	–	Nagapattinam
Nilgiris	2,549	704,827	Udagamandalam
N. Arcot-Ambedkar	12,265	3,000,208	Vellore
Periyar	4,800	2,322,851	Erode
Pudukkottai	4,137	1,322,494	Pudukkottai
Ramanathapuram	4,217	1,135,887	Ramanathapuram
Kamarajar	4,175	1,554,350	Virudhunagar
Pasumpon Thevar Thirumagan	4,186	1,074,989	Sivagangai
Salem	8,643	3,914,239	Salem
S. Arcot	10,898	4,870,871	Cuddalore
Thiruchirappalli	11,208	4,114,323	Thiruchirappalli
Thanjavur	8,670	4,526,709	Thanjavur
Tirunelveli Kattabomman	6,780	2,493,189	Tirunelveli
Thiruvannamalai-Sambuvarayar	—	1,997,458	Tiruvannamalai
Chidambaranar	4,649	1,455,796	Tuticorin

* This is a new District formed in October, 1991.

State of Economy: Agriculture is the mainstay of Tamil Nadu's economy. The yield of rice amounting to 2.5 tonnes per hectare is among the highest in India. At the end of 1988, Tamil Nadu achieved a production level of 71.97 lakh tonnes of rice and other cereals, 2.83 lakh tonnes of pulses and 13.69 lakh tonnes of oil seeds.

Tamil Nadu's sugarcane yield of 100 tonnes per ha is a world record. About 3.5 lakh acres have sugar cane grown on them. Cotton is grown in 2.8 lakh ha.

The principal plantation crops are tea and coffee.

Tamil Nadu accounts for nearly one fourth of the spinning capacity in India, one fifth of cement, caustic soda and nitrogenous fertilisers and one tenth of the nation's production of sugar, bicycles and calcium carbide. Tamil Nadu produces 60% of safety matches and 77% of finished leather.

The Tamil Nadu Industrial Development Corporation (TIDCO), State Industries Promotion Corporation of Tamil Nadu (SIPCOT) and TIIC are the

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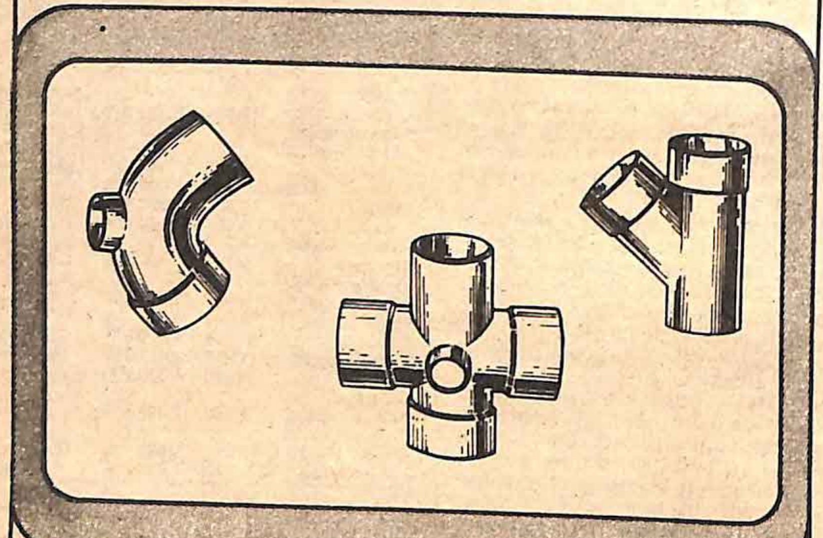

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BUSINESS ASSOCIATES

major Corporations set up to provide financial assistance and technical knowhow to large, medium and small scale industries. With the aid of these Corporations, industrial complexes called growth centres and industrial estates have been provided in different parts of Tamil Nadu—Hosur, Ranipet, Guindy, Ambattur, Karaikudi, Sivagangai, Paramakudi and Tiruchirappalli.

Universities: Sri Avinasalingom Inst. for Home Sci. & Higher Edn. for Women, Coimbatore; Tamil University, Thanjavur; Tamil Nadu G. D. Naidu Agrl. University, Coimbatore; Mother Teresa Women's University, Madras; University of Madras, Madras; Madurai Kamaraj University, Madurai; Indian Inst. of Tech., Madras; Gandhigram Rural Inst., Madurai; Dakshina Bharat Hindi Prachar Sabha, Madras; Bharathiar University, Coimbatore; Bharatidasan University, Thiruchirapally; Alagappa University, Karakudi; Anna University, Madras; Annamalai University, Annamalainagar, Tamil Nadu; Dr. M.G.R. Medical University, Madras; Tamil Nadu Veterinary and Animal Sciences University, Madras; Manonmaniam Sundaranar University, Tirunelveli

Tourist Centres: Tamil Nadu Tourism Development Corporation runs a chain of 17 hotels, one Beach Resort and 10 Youth Hostels.

It has also constructed boat houses at Muthukkadu, Ootty, Pichavaram and Yercaud.

Hill Stations: Uthagamandalam (Ooty), Kodaikanal and Yercaud.

Religious Places: Suchindram, Rameswaram, Tiruchendur, Madurai, Palani, Tiruchirapalli, Srirangam, Thanjavur, Kumbakonam, Nagore, Velankanni, Vaitheeswaran Koil, Chidambaram, Thiruvannamalai, Kancheepuram, Tiruttani and Kanyakumari.

Tourist Centres: Mamallapuram, Poompuhar, Pichawaram, Point Calimere, Courtallam, Hogenakkal, Anamalai Sanctuary, Mudumalai Sanctuary, Vedanthangal Bird Sanctuary, Kalakkad and Vandaloor Zoo and Mundanthurai Sanctuary.

At Madras: Fort St. George, Fort Museum, Marina Beach, Snake Park, Guindy Park, Guindy Deer Sanctuary and Children's Park, Egmore Museum, Valluvarkottam Park, Crocodile and Vandaloor Zoo, Muthukkadu Boat House.

Governor: Bishma Narayan Singh; **Chief Minister:** Ms. Jayalalitha (AIADMK).

Tripura

Area: 10,486 sq km; **Capital:** Agartala; **Languages:** Bengali, Kakbark and Manipuri; **Districts:** 3; **Population:** 2,744,827; **Males:** 1,410,545; **Females:** 1,334,282; **Increase in (1981-91):** 691,769; **Growth Rate (per cent) 1981-91:** 33.69; **Density (persons per sq. km.):** 262; **Sex Ratio (females per 1000 males):** 946; **Literacy:** 60.39%; **Males:** 70.08; **Females:** 50.01; **Per capita:** Rs. 1206 (1980-81).

Tripura is the second smallest state in India. It was formally declared a Union Territory on November 1, 1957 and elevated to the status of a full-fledged state on January 21, 1972.

Religious Population: Hindus - 1,834,218; Muslims 138,529; Christians 24,872; Sikhs 285; Buddhists 54,806.

Physiography: Tripura is surrounded by Bangladesh on all sides, except for a narrow neck in the north-east, where it borders on Assam and Mizoram.

History: Tripura was a Hindu state of great antiquity having been ruled by the Maharajas for 1,300 years before its accession to the Indian Union on October 15, 1949. With the reorganization of states on Sept. 1, 1956 Tripura became a union territory. The territory was made a state on January 21, 1972.

Administration: The Legislature has a single chamber–the Legislative Assembly. The jurisdiction of the Guwahati High Court extends over Tripura, with a bench functioning at Agartala.

Tripura is divided into three districts, 10 administrative sub-divisions, 177 tehsils and 5215 villages.

Districts

District	Area (sq.km.)	Population '91
North Tripura	3,541	690,565
West Tripura	3,359	1,289,086
South Tripura	3,577	765,176

State of Economy: About 54.5% of the land is under forest. Only about 24.3% area is available for agricultural use. The principal crops are paddy, wheat, jute, mesta, sugarcane, potato and oil seeds. Agriculture is being practised in about 2.5 lakh ha.

Tea is a major industry. There are 49 registered tea gardens covering an area of 5.527 lakh hectares and producing 45 lakh kg of tea per year. Tripura Tea Development Corporation has started new plantations.

A jute mill set up in Agartala under the public sector produces about 20 tonnes of jute products per day and employs about 2,000 persons.

Handloom weaving is the single largest industry. It is essentially a tribal household industry. Nine pilot centres have been started for imparting training in improved techniques. Tripura Handloom & Handicrafts Development Corporation sells their products. Apex Weavers' Society caters to the needs of about 50 primary Weavers' Co-operative Societies. The organizations have been marketing products worth Rs. 3 crore a year of an average. About 7000 weavers have been getting benefits.

The sericulture industry is developing fast. The area under mulberry cultivation is about 500 ha and production of cocoon is estimated to be 5000 kg per year. A design centre on handicrafts is functioning at Agartala. About 5000 craftsmen are now engaged in production of handicrafts (mainly cane and bamboo)

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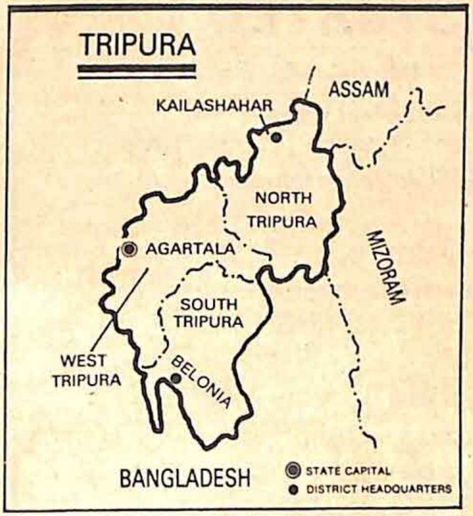

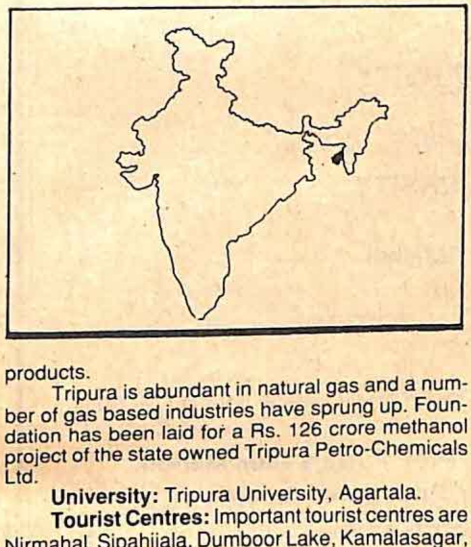

products.

Tripura is abundant in natural gas and a number of gas based industries have sprung up. Foundation has been laid for a Rs. 126 crore methanol project of the state owned Tripura Petro-Chemicals Ltd.

University: Tripura University, Agartala.

Tourist Centres: Important tourist centres are Nirmahal, Sipahijala, Dumboor Lake, Kamalasagar, Jumpui Hill, Unakoti and Matabari.

Governor: Raghunath Reddy; **Chief Minister:** Sudhir Ranjan Majumdar (Congress-I).

Uttar Pradesh

Area: 294,411 sq km; **Capital:** Lucknow; **Language:** Hindi; **Districts:** 63; **Population:** 138,760,417; **Males:** 73,745,994; **Females:** 65,014,423; **Increase in Population (1981-91):** 27,897,905; **Growth Rate (per cent) 1981-91:** 25.16; **Density (persons per sq.km.):** 471; **Sex Ratio (females per 1000 males):** 882; **Literacy:** 41.71; **Males:** 55.35; **Females:** 26.02; **Per capita:** Rs. 1,988.00.

Uttar Pradesh is the most populous state in India. In area, it ranks fourth, after M.P., Rajasthan and Maharashtra. It covers about 9 per cent of the total area of India.

Religious population: Hindus - 92,365,968, Muslims - 17,657,735, Christians - 162,199, Sikhs - 45,647; Buddhists - 54,542.

Physiography: Uttar Pradesh is bounded by Tibet and Nepal on the north, Himachal Pradesh on the northwest, Haryana on the west, Rajasthan on the southwest, Madhya Pradesh on the south and southwest and Bihar on the east.

Uttar Pradesh can be divided into three distinct regions: (1) northern mountains, (ii) southern hills and plateau and (iii) the Ganga plain.

1. The lofty Himalayas embraces Uttar Kashi, Chamoli, Pithoragarh, Tehri-Garhwal, Garhwal and Almora districts, Nainital tehsil of Nainital district and Chakrata tehsil and a part of Dehra Dun tehsil of Dehra Dun district in the north, covering about one-sixth of the total area of the state.

2. This region covers almost the whole of Jhansi, Jalaun, Hamirpur and Banda districts, the Meja and Karchhana tehsils of Allahabad district, nearly the entire Mirzapur district south of the Ganga river and the Chakia tehsil of Varanasi district. The altitude in this area does not generally exceed 300 metres above mean sea level.

3. Between the Himalayas in the north and the hills and plateau in the south lies a vast homogeneous alluvial plain, one of the largest in the world. Because of the deep alluvium strata the region is almost devoid of minerals, which partly accounts for the very insignificant industrial development of U.P. On the other hand, its high fertility has led to heavy pressure of population on land.

The state has a tropical climate except for the Himalayan region which has a temperate climate.

The main rivers of the state from west to east are the Yamuna, the Ganga, the Ramganga, the Gomati and the Ghaghara. All the rivers, except the Gomati, emerge from the Himalayas. The Yamuna and the Ganga flow from north-east to south-west in their upper mountainous courses, from north to the south in western parts of the state and thereafter from north-west to south-east, joining at Allahabad.

History: Uttar Pradesh has a very ancient and colourful history. Although the state does not find mention in the Rig Veda, it is recognised in the later vedic age as Brahmarshi Desa or Madhya Desa. Many of the great sages of the Vedic times like Bharadwaja, Yajnavalkya, Vasishta, Viswamitra and Valmiki appear to have flourished in U.P. Many sacred books of the Aryans were also composed here. Varsha Purana, for example, is associated with Mathura.

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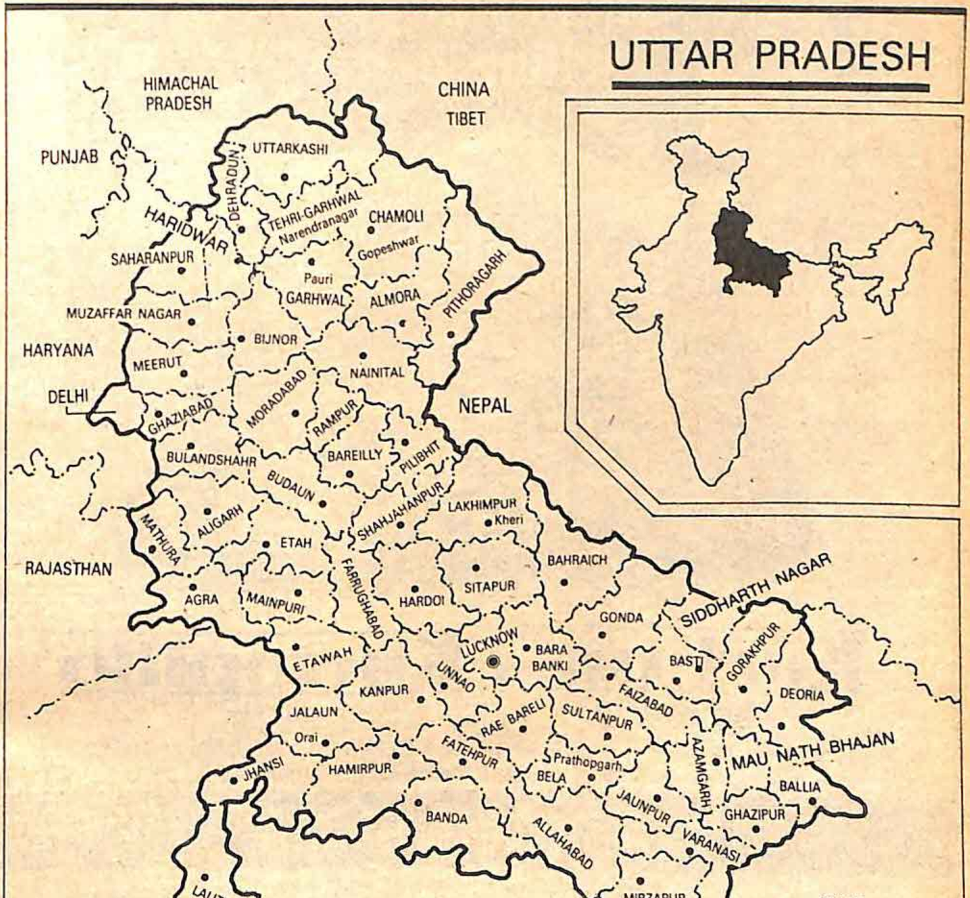
The two great epics of India, the Ramayana and the Mahabharata, appear to have been inspired by U.P. The Ramayana features the royal family of Kosala and the Mahabharata centres round the royal family at Hastinapura, both in Uttar Pradesh.

In the 6th century B.C., U.P. was associated with two new religions, Jainism and Buddhism. Mahavira, the founder of Jainism, is said to have breathed his last at Doora in U.P. It was at Saranath, again in U.P., that the great Buddha preached his first sermon and laid the foundations of his order. In the post-Buddhist period several centres in U.P., like Ayodhya, Prayag, Varanasi and Mathura became reputed centres of learning. Sri Sankaracharya, the great Hindu reformer established one of his ashrams at Badrinath in U.P.

In the mediaeval period U.P. passed under Muslim rule and led the way to a new synthesis of Hindu and Islamic cultures. Ramananda and his Muslim disciple Kabir, Tulasidas and Birbal and many other intellectuals contributed to the growth of Hindi and Urdu. Urdu remains the perfect synthesis of Hindu and Muslim cultures.

Uttar Pradesh kept up its intellectual leadership



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under the British administration. The British combined Agra and Oudh into one province called the United Provinces of Agra and Oudh. The name was shortened to United Provinces in 1935. After indepenence in January, 1950, the United Province was renamed Uttar Pradesh.

Administration: The state has a bicameral legislature—the Legislative Assembly and the Legislative Council.

The state is divided into 63 districts.

Districts

Districts	Area (sq km)	Population (1991)	Head-quarters
Agra	4,805	2,704,545	Agra
Aligarh	5,019	3,296,758	Aligarh
Allahabad	7,261	4,909,919	Allahabad
Almora	5,385	824,134	Almora
Azamgarh	5,740	3,148,830	Azamgarh
Bahraich	6,877	2,748,327	Bahraich
Ballia	3,189	2,249,598	Ballia
Banda	7,624	1,851,014	Banda
Bara-Banki	4,401	2,422,763	Bara-Banki
Bareilly	4,120	2,822,988	Bareilly
Basti	7,228	2,750,764	Basti
Bijnor	4,848	2,444,989	Bijnor
Budaun	5,168	2,440,135	Budaun
Bulandshahr	4,352	2,842,391	Bulandshahr
Chamoli	9,125	441,667	Chamoli
Dehra Dun	3,088	1,014,700	Dehra Dun
Deoria	5,445	4,427,345	Deoria
Etah	4,446	2,240,328	Etah
Etawah	4,326	2,128,151	Etawah
Faizabad	4,511	2,983,950	Faizabad
Farrukhabad	4,274	2,431,426	Fatehgarh
Fatehpur	4,152	1,890,697	Fatehpur
Garhwal	5,440	666,165	Pauri
Ghazipur	3,377	2,398,746	Ghazipur
Ghaziabad	2,590	2,755,636	Ghaziabad
Gonda	7,352	3,571,797	Gonda
Gorakhpur	6,272	3,067,280	Gorakhpur
Hamirpur	7,165	1,465,401	Hamirpur
Hardoi	5,986	2,739,003	Hardoi
Jalaun	4,565	1,217,021	Orai
Jaunpur	4,038	3,205,019	Jaunpur
Jhansi	5,024	1,426,751	Jhansi
Kanpur (Rural)	5,848	2,136,504	Kanpur
Kanpur (Urban)	337	2,485,490	Kanpur
Kheri	7,680	2,413,463	Kheri
Lalitpur	5,039	748,997	Lalitpur
Lucknow	2,528	2,744,578	Lucknow
Mainpuri	4,343	1,306,161	Mainpuri
Mathura	3,811	1,923,920	Mathura
Meerut	3,911	3,404,000	Meerut
Mirzapur	11,310	1,653,834	Mirzapur
Moradabad	5,967	4,114,119	Moradabad
Muzaffarnagar	4,176	2,833,856	Muzaffarnagar
Naini Tal	6,794	1,557,415	Naini Tal
Pilibhit	3,499	1,277,331	Pilibhit
Pithoragarh	8,856	557,148	Pithoragarh
Pratapgarh	3,717	2,210,680	Pratapgarh
Rae Bareli	4,609	2,320,620	Rae Bareli
Rampur	2,367	1,498,294	Rampur
Saharanpur	5,595	2,298,495	Saharanpur
Shahjahanpur	4,575	1,981,950	Shahjahanpur
Sitapur	5,743	2,846,450	Sitapur
Sultanpur	4,436	2,560,805	Sultanpur
Tehri-Garhwal	4,421	575,352	Narendranagar
Unnao	4,558	2,195,513	Unnao
Uttarkashi	8,016	237,772	Uttarkashi
Varanasi	5,091	4,798,729	Varanasi
New Districts			
Sidharth Nagar	—	1,706,634	Navagarh
Haridwar	—	1,122,781	Haridwar
Firozabad	—	1,532,282	Firozabad
Maunath Bhanjan	—	1,441,027	Maunath Bhanjan
Sonbhadra	—	1,068,637	Robertsganj
Maharajganj	—	1,679,342	Maharajganj

State of Economy: U.P. is the largest producer of foodgrains and oilseeds in the country. It leads all the states in India in the production of wheat, maize, barley, gram, sugar-cane and potatoes.

Among food crops wheat, rice, gram, maize and barley are important in the state. In the year 1989-90 total production was 971.28 lakh tonnes. The production of wheat was 177.86 lakh tonnes and production of rice was 93.56 lakh tonnes.

Among cash crops, production of rapeseeds and mustard was 17.45 lakh tonnes. The state produces about one half of the total sugarcane output in the country. During the year 1989-90, the state produced 0.03 lakh tonnes of jute.

Until recently the organized industrial sector of U.P. was confined to agro-based industries such as sugar, cotton textiles, edible oils, miscellaneous food preparations, paper, etc. However, of late, electricity generation, railroad equipment, electrical machinery, basic industrial chemicals and aluminium and cement factories have sprung up.

Sugar, cotton textiles and miscellaneous food preparations (mainly comprising edible oils including hydrogenated oils) are the three important industries in the large scale sector.

For the co-ordinated and rapid economic development, emphasis is being laid on village oriented small industries like handlooms—silk and others. Under the seventh plan, 216,251 small industries units were set-up. At the end of the sixth plan big and medium industries were set-up with an investment of Rs. 3,575 crore and their number increased to 939 with total investment of Rs. 7,842.98 crore during the seventh plan. Eighth plan target was to set-up 500 more new industries with an investment of Rs. 2,000 crore. Rate of industrial development growth is expected to be 12.5 per cent.

Handloom industry meets nearly one-third of the total requirement of cloth in the state. During the year 1989-90, production of handloom cloth was 660.88 million metres.

Twenty four spinning mills are functioning in the state under public and private sectors. More than 44,000 persons are employed in these mills.

Now because of the availability of gas from Bombay High, scope of industries in the state is very wide. Two fertilizer plants based on gas have already been set up. Other big industries are goods carrier equipments, photostat machines, chemicals,

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polyster fibre, polyster chips, colour picture-tube, watches, jelly-filled cables, sheet moulding, compounds and steel-tube galvanized sheets. Over and above projects worth Rs. 7,000 crore are under consideration. Among them are fertilizer, gas cracker, aromatic complex, polyster filament yarn, optic fibre, ethylene glycol and photofilm.

Production of sugar was at 58.00 lakh tonnes (sugar cane crushed 660 lakh qunitals).

Universities: Agra University, Agra; Allahabad University, Allahabad; Aligarh Muslim University, Aligarh; Avadh University, Faizabad; Banaras Hindu University, Banaras; University of Bundelkhand, Jhansi; Chandrasekhar Azad University of Agrl. & Tech., Kanpur; Dayalbagh Educational Trust, Agra; Garhwal H. N. Bahuguna University, Srinagar; University of Gorakhpur, Gorakhpur; Govind Ballabh Pant University of Agriculture & Tech., Nainital; Gurukula Kangri Vishwa Vidyalaya, Hardwar; Kanpur University, Kanpur; Kumaun University, Nainital; University of Lucknow, Lucknow; Meerut University, Meerut; Narendra Deva University of Agri. & Tech., Faizabad; Rohilkhand University, Bareilly; University of Roorkee, Roorke; Sampurnand Sanskrit Vishwa Vidyalaya, Varanasi; Sanjay Gandhi P.G. Inst. of Med. Sciences, Lucknow.

Tourist Centres: Uttar Pradesh has a treasure of rare scenic beauty spots, rich fauna and flora, ideal health resorts, high mountain peaks, fascinating rivers and captivating valleys.

The world-renowned Valley of Flowers, Yamunotri, Gangotri, Kedarnath, Badrinath, Hemkund, Pindari Glacier and hill resorts of rare charm, like Naini Tal and Mussoorie, Ranikhet and Almora attract ever increasing number of tourists. Places like Sravasti, Sarnath, Kushinagar, Sankisa and Kaushambi attract pilgrims both from within and outside the country.

Besides ancient places of pilgrimage like Varanasi, Naimisharanya, Prayag and Hardwar are also situated in the state. Places like Agra, Ayodhya, Sarnath, Varanasi, Lucknow, Mathura and Prayag have rich treasures of Hindu and Islamic architecture.

Governor: B. Satya Narain Reddy; **Chief Minister:** Kalyan Singh (BJP).

West Bengal

Area: 87,853 sq km; **Capital:** Calcutta; **Language:** Bengali; **Districts:** 17; **Population:** 67,982,732; **Males:** 35,461,898; **Females:** 32,520,834; **Increase in (1981-91):** 13,402,085; **Growth Rate (per cent) 1981-91):** 24.55; **Density (persons per sq. km.):** 766; **Sex Ratio (females per 1000 males):** 917; **Literacy:** 57.72%; **Males:** 67.24; **Females:** 47.15; **Per capita:** Rs. 2813.00

West Bengal covers the bottleneck of India in the east stretching from the Himalayas in the north to the Bay of Bengal in the south. It is bounded on the north by Sikkim and Bhutan, on the east by Assam and Bangladesh, on the south by the Bay of Bengal and on the west by Orissa, Bihar and Nepal.

Physiography: West Bengal has two natural divisions, the Himalayan north comprising the districts of Darjeeling, Jalpaiguri and Cooch Behar and the alluvial plain that lies south of it. Darjeeling, the northernmost district has a maximum elevation of 3658 m above the sea level. The Jalpaiguri and Cooch Behar districts are low-lying areas watered by swift-flowing rivers like the Tista, the Torsa, the Jaldhaka and the Ranjit. The southern part is a thickly populated level expanse of rice fields, dotted with mango, coconut and banana gardens. This vast alluvial plain is the handiwork of many big rivers, the chief of which are the Bhagirathi and its tributaries - the Mayurakshi, the Damodar, the Kangsabati, and the Rupnarayan. The Bhagirathi, called Hooghly in its lower reaches, is itself a branch of the Ganga and provides Calcutta its link with the sea.

The entire state belongs to the high rainfall region. Rainfall varies from 1006 mm in the South Western region to 2933 mm in the northern region. However the state capital receives normal rainfall i.e. 1605 mm.

History: The old Bengal (of which W. Bengal forms a part) known as Gauda or Vanga in ancient Sanskrit literature appears to have been celebrated from the epic period. The Mahabharata refers to the King of Vanga as an ally of the Kauravas in their war against Pandavas. Apparently at the time of Aryan penetration into the east, Vanga had a well-settled civilization and culture.

In the 3rd century B.C. Bengal was part of the Mauryan Empire and from the 4th to the 6th centuries A.D., it was under the Gupta dynasty. By about A.D. 800, Bengal had its own dynasty of independent kings, the Palas. The Palas were very powerful and expanded their territories into the neighbouring countries of Bihar, Orissa and Assam.

At the height of their power they had diplomatic relations with the Indonesian King Sri Vijaya. In the 11th century, Bengal passed under the rule of a new dynasty, the Senas. The Senas who ruled from their capital at Nadia were driven out by Qutbud Din, the Sultan of Delhi and Bengal became a part of the Delhi Empire. With the death of Aurangzeb, the last of the great Mughals, Bengal became independent under its Muslim governors. Siraj Daula, the last independent Muslim ruler of Bengal, was defeated by the British at the battle of Plassey in 1757. For about seven years the British were in a sort of dual control with the successors of Siraj Daula, Mir Jaffar and Mir Kasim. In 1764 Mir Kasim was routed at the battle of Buxar and the British took over the administration of Bengal.

When Bengal was first constituted by the British as a province it was a vast area, including

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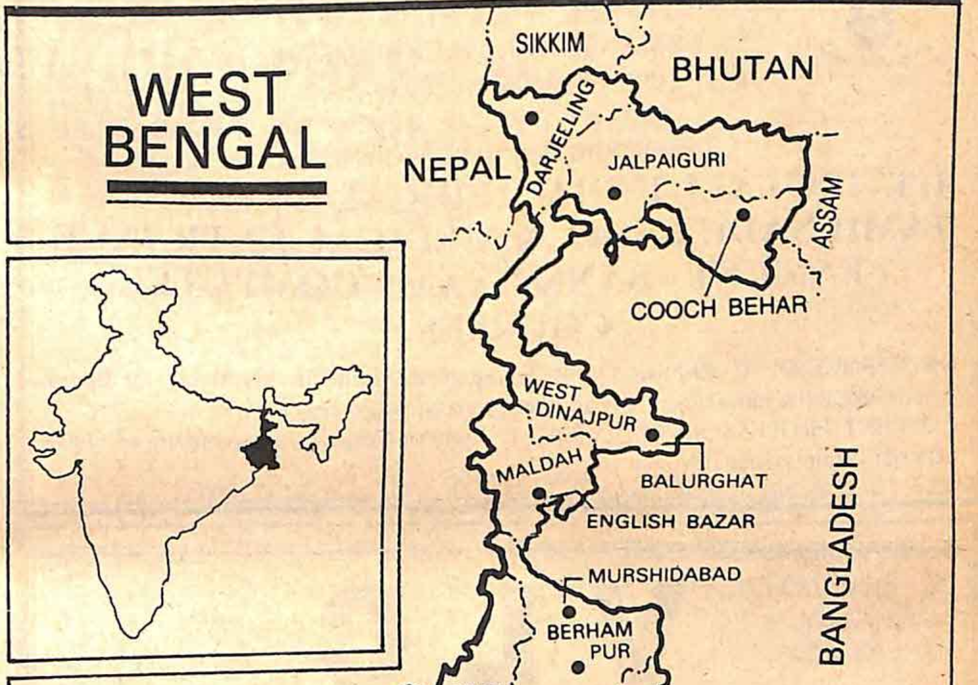
present-day Bihar and Orissa and extended westwards upto Agra. In 1863 Agra was detached from Bengal but Assam was added to it. In 1874 Assam was formed into a separate province.

In 1905, Lord Curzon divided Bengal into two provinces. A new province called Assam and East Bengal with its capital at Dacca was carved out of old Bengal. The rest of the territory together with Bihar and part of Orissa formed Bengal. This event, known as the partition of Bengal, aroused the dormant



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patriotism of the Bengalis, who opposed the partition as an attempt at distintergrating Bengal. The rest of India stood by Bengal and troubles broke out.

Peace was restored in 1911, when the partition was abrogated by a declaration of King George V at the Royal Durbar in Delhi. Another change announced at the Durbar was the shifting of the capital from Calcutta to Delhi. The new Bengal did not include Assam or Bihar. It was a compact area of over 200,500 sq km.

When India became independent in 1947, Bengal was partitioned between India and Pakistan. While Pakistan's share came to be called East Pakistan, India's share was called West Bengal. In 1950 the Princely State of Cooch Behar was merged into West Bengal. The former French enclave of Chandranagore was added on Oct. 2, 1954. Under the State Reorganization Act, some parts of Bihar were transferred to Bengal.

Administration: The legislature is unicameral—the Legislative Assembly. The state is divided into 17 districts.

Districts

District	Area (Sq.Kms)	Population (1991)	Head-quarters
Bankura	6,882.0	2,799,455	Bankura
Birbhum	4,545.0	2,556,105	Suri
Bardhaman	7,024.0	5,979,050	Bardhaman
Calcutta	104.9	4,388,262	Calcutta
Cooch Behar	3,387.0	2,158,169	Cooch-Behar
Darjeeling	3,075.0	1,335,618	Darjeeling
Hooghly	3,149.0	4,352,660	Chinsurah
Howrah	3,467.0	3,718,911	Howrah
Jalpaiguri	6,227.0	2,789,827	Jalpaiguri
Malda	3,733.0	2,633,942	Malda
Midnapore	14,081.0	8,349,890	Midnapore
Murshidabad	5,324.0	4,734,278	Berhampore
Nadia	3,927.0	3,848,247	Krishnagar
Purulia	6,259.0	2,217,423	Purulia
North 24 Parganas	—	7,280,261	Barasat
South 24 Parganas	14,135.1	5,708,260	Alipore
West Dinajpur	5,358.0	3,132,374	Balurghat

The three-tiered pachayat system is with 3,437 Gram Panchayat at base, 331 panchayat samities at the community block (intermediate) level and 16 Zilla (District) at the apex. The last Panchayat Election took place in June, 1988. Total number of seats at different levels taken together stands at 62,692 only. The Panchayat acts as agencies for implementing development programmes.

State of Economy: West Bengal with 14.0% of all India production is at present the highest producer of rice amongst the States in India. In spite of heavy precipitation in August, 1988 which innundated large areas of the districts of North Bengal and deficit rainfall in Gangetic West Bengal plus cyclonic stroms in coastal south 24-Parganas, the State achieved a production of 115,155- thousand tonnes in 1988-89 surpassing the record production of 1987-88. Rice occupies 5,622.0 thousand hectares (1988-89).

Among cash crops jute, mesta and tea dominate. West Bengal produces 59.5% of India's jute and mesta (1988-89) and 21.5% of tea (1988) and 29.2% of potato (1988-89).

Oilseeds covered 4,92.5 thousand hectares (1988-89) and produced 403.6 thousand tonnes (1988-89). The decline of production of oilseeds in the State is mainly due to a fall in the area under oilseeds. Home production only meets a fraction of the State's requirements. Much of this commodity is imported from nearby States.

The Left Front Government of West Bengal launched a special programme called 'Operation Barga' for ensuring the rights of share-croppers through recording the names of bargadars. The work of 'Operation Barga' is still in progress along with normal settlement work. With active help from the panchayats the State Government could up to June 30, 1989, distribute 351,732.835 hectares of vested agricultural land. As much as 1,828,274 persons received land, among whom, nearly 37% and 16% belonged to the Scheduled Castes and Scheduled Tribes respectively.

The production of coal in the State showed a little improvement from 21.06 million M.T. (1987) to 21.56 million M.T. (1988, provisional). This improvement could have been more if power supply to the Eastern Coal Ltd. (which covers most of the coal mines in West Bengal) was adequate.

Universities: Bidhan Chandra Krishi Viswa Vidyalaya, Mohanpur (District Nadia) ; University of Burdwan, Burdwan; University of Calcutta, Calcutta; Jadavpur University, Calcutta; University of Kalyani, Kalyani (District Nadia); North Bengal University, Siliguri (District Darjeeling); Rabindra Bharati University, Calcutta; Viswabharati, Santiniketan (District Birbhum); Vidyasagar University, Midnapore; Asiatic Society (deemed University) Calcutta; Indian Institute of Management, Calcutta; Indian Statistical Institute, Calcutta; Indian Institute of Technology, Kharagpur (Dist: Midnapore).

Tourist Centres: Calcutta upto 1912 was the capital of India. Now, of course, it is the commercial capital of the north-eastern states of India. It is also the headquarters of the State Government. It is the centre of industries like jute, tea, hides and skins, coal, lac, etc. Places of interest, among others, are Victoria Memorial (Picture Gallery and Museum), Indian Museum, Zoological Garden, Pareshnath Temple (Jain Temple), Kalighat Temple (Architecture: Typical Mediaeval Bengal), Nakhoda Mosque, Dhaknineswar Temple, Nandan Mahajati Sadan, Belvedere House (originally the residence of British Viceroys when they visited Calcutta, now turned into National Library), Raj Bhavan (official residence of State Governor), Marble Place, Eden Gardens, Binoy Badal-Dinesh Bag (erstwhile Dalhousie Square),

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Governor: Prof. Syed Nurul Hassan; **Chief Minister:** Jyoti Basu. (C.P.M.).

UNION TERRITORIES

Territory	Population (1991)	Density (per sq km)	Sex Ratio**	Literacy (percentage)
Andaman & Nicobar Islands	277,989	34	820	73.74
Chandigarh	640,725	5620	793	78.73
Dadra & Nagar Haveli	138,542	282	953	39.46
Daman & Diu	101,439	906	972	73.58
Delhi	9,370,475	6139	830	76.09
Lakshadweep	51,681	1615	944	79.23
Pondicherry	789,416	1605	982	74.91

** Sex Ratio is the number of women per 1000 men. Only Kerala among states & union territories has more women – 1040/1000

Andaman and Nicobar

Area: 8249 sq km; **Capital:** Port Blair; **Languages:** Bengali, Hindi, Nicobarese, Telugu, Tamil & Malayalam. **Districts:** 2; **Population:** 277,989; **Males:** 152,737; **Females:** 125,252; **Increase in (1981-91):** 89,248; **Growth Rate (per cent 1981-91):** 47.29; **Density (persons per sq. km.):** 34; **Sex Ratio (females per 1000 males):** 820; **Literacy:** 73.74%; **Males:** 79.68; **Females:** 66.22.

Andaman and Nicobar Islands are a group of more than 3000 islands, the great majority of which (about 265) are uninhabited being too small and with little or no water. This group of islands in the Bay of Bengal may be considered the counterpart of the Lakshadweep Islands in the Arabian sea—both of them being the overseas possessions of the Indian Union.

Physiography: Andaman and Nicobar Islands are continental islands lying between 6 and 14 degrees north latitude and 92 and 94 degrees east longitude. They form two broad groups—Andamans and Nicobars which are separated by the 10 degree channel which is about 145 km wide and 400 fathoms deep. Geologically the islands appear to have been part of the land mass of south east Asia comprising north east India, Burma, Thailand, Malaysia and Indonesia.

It is thought that Andamans and Nicobars are the remnants of two vast mountain ranges which, at one time, stretched from Arakan in Burma (Cape Negrias) to Sumatra (Achin Head) in Indonesia.

Port Blair, the headquarters of the Islands, is 1255 km from Calcutta (by sea), 1191 km from Madras and 580 km from Yangon (Rangoon).

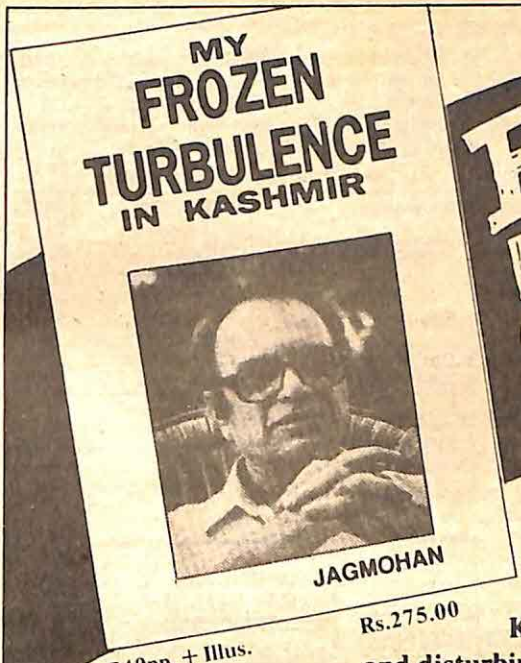
The Andaman Group has, at the extreme north, Land Fall Island which is about 900 km from the mouth of the Hooghly river and about 190 km from Burma. This Island is followed by the three main islands, North Andaman, Middle Andaman and South Andaman—all of them separated from each other by shallow seas. This area is known as Great Andaman. Further south, at a distance of about 100 km from Port Blair, lies Little Andaman Island. Besides these, there is a large number of other islands in the group, many of them very small in size.

The Nicobar Group lying south of the Andamans extends from 66° to 100° north latitude. The northernmost island is Car Nicobar which lies about 120 km to the south of Little Andaman and the southernmost island is Great Nicobar barely 150 km from Sumatra. Pygmalion Point also known as Parsons Point which has since been renamed as "Indira Point" is the southernmost tip of India and not "Kanyakumari" as is popularly known.

The important islands in this group are Great Nicobar, Car Nicobar, Chowra, Teressa, Nancowrie, Katchal and Little Nicobar.

The total area of the two groups of islands is 8249 sq km of which Andamans with 6340 sq km accounts for more than 76 per cent of the land area.

The total area of the Nicobar group of islands is 1953 sq km, the length and width being about 260 km and 58 km respectively. In this group, the Great Nicobar has the largest area of about 1045 sq km.



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ISHTIHAAR

The climate of Andaman & Nicobar Islands is of the tropical type but the continuous breeze from the surrounding seas makes it very pleasant.

History: The Andaman and Nicobar Islands, also known as the Bay Islands, had little historical importance till the advent of the European powers into India and the East in the 16th century. The Portuguese who came first were not particularly interested in these islands but they were interested in the East Indies. The Dutch who came next drove the Portuguese from the East Indies and the Bay Islands naturally came into their domain. Meanwhile, the British who had established themselves in India came into conflict with the Dutch in and around the Andamans. It did not take long for the British to drive out the Dutch and occupy the islands.

The first settlement was established in North Andamans in the year 1789. Attempts at colonisation were ultimately given up but the penal settlement survived. Then came the Revolt of 1857 in India. The British found that they had on their hands a large number of rebel convicts whom the Indian prisons of those days would hardly contain. The Andamans offered a ready-made solution. It is estimated that between 1858 and 1860 some 2000-4000 sepoy mutineers were sent to the Andamans. Many of them died. The construction of the Cellular Jail was taken up in 1896. The construction itself was carried out by convicts.

The constitutional reforms of 1935 necessitated a thorough revision of policy. In Sept. 1937, the first batch of prisoners left the Andamans and by Jan. 1938 all prisoners were released.

The Second World War and the consequent Japanese occupation of these islands from 1942-1945 brought the islanders a taste of foreign military occupation. After the evacuation of the Japanese in 1945, the islands, as part of India, became free on August 15, 1947.

One beneficial result of the Japanese occupation was the expulsion of the Indian traders, who had ruthlessly exploited the ignorant islanders. They had either fled from the islands or were killed during Japanese occupation.

After independence, the Government of India was keen that mainland traders did not return to exploit the people and destroy their culture. The Andaman and Nicobar Islands (Protection of Aboriginal Tribes) Act was passed in 1956, under which entry into tribal areas was prohibited and no outsider could carry on trade or industry in the islands, without the licence from the Administrator. Since 1938, refugees and ex-servicemen were permitted and encouraged to settle down in the islands. Many of them have now become permanent settlers.

On November 1, 1956 the Andaman and Nicobar Islands were constituted into a Union Territory, administered by the President of India. From November 1982 onwards the local administration is headed by a Lt. Governor with his headquarters at Port Blair. In 1979 in response to a national demand, the former Prime Minister Morarji Desai dedicated the Cellular Jail as a National Memorial.

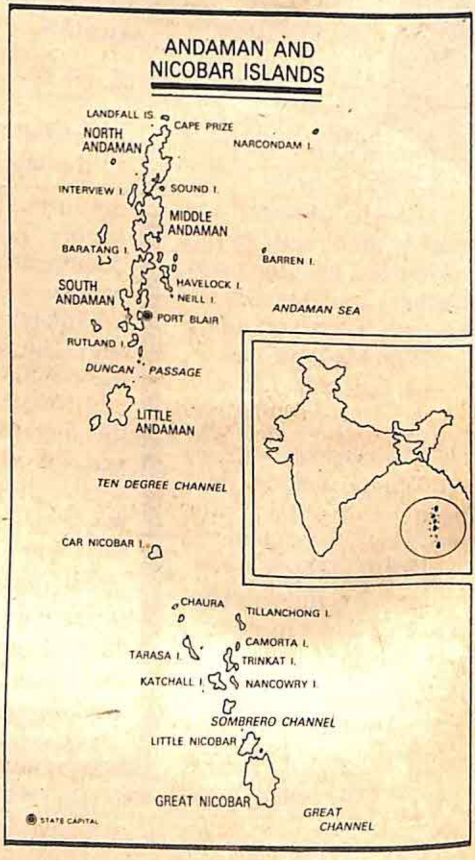
Administration: The entire territory is delimited into 4 Sub Divisions and 7 tehsils as follows:-

Area, Sub Divisions, Tehsils

Sub Division	Tehsils in the Sub division	Area sq km
1. Mayabunder	1. Diglipur	884
	2. Mayabunder	1348
	3. Rangat	1098
2. South Andaman	1. Port Blair	
	2. Ferrargunj	3010
3. Car Nicobar	1. Car Nicobar	129
4. Nancowrie	1. Nancowrie	1824

Population 1991

Andamans District	203,968
Nicobars District	39,021
Total	277,989



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The Tribals of Andaman

There are 6 primitive tribes in the Andaman and Nicobar Islands of which 4 belong to the Negrito stock viz. the Andamanese, the Onges, the Jarawas and the Sentinalese and 2 of the Mongoloid origin, viz., the Nicobarese and the Shompens. Of these, the Nicobarese and the Shompens live in the Nicobar District and the other 4 tribes are found in the Andaman District. The Nicobarese are a very thriving tribe and their population now is 29,000.

The Shompens are estimated to be more than 214. Of the primitive tribes, the Andamanese and the Onges are very friendly with civilization. Periodic contracts with the Jarawas are being made and the last such contact was made in April 1991.

There are two groups of Jarawas i.e. Middle Andaman and South Andaman. The first contact with the Jarawas of Middle Andaman was established in 1974 while the first such contact with the Jarawas of South Andaman Island was established on 1st March, 1989 by the Contact Expedition headed by Shri S. A. Awaradi, Director of Tribal Welfare, A&N Administration.

When the contact team led by the Lt. Governor, M. L. Kampani, visited them at Lakra Lungha in Foul Bay (Middle Andaman), a batch of 96 Jarawas including men, women and children were present to greet the Lt. Governor and the team. They are no longer hostile to civilization although they are not very much inclined to accept the modern way of life.

The contact expeditions to Sentinalese of North Sentinal Island are being organised regularly. However, no contact has so far been established with the Sentinalese. The gifts like coconuts carried by the Contact Expedition team are dropped on the shore of North Sentinal Island which are collected by the Sentinalese later. The last such expedition was organised in February, 1991.

The Administration has settled the Great Andamanese in Strait Island, a small area (6 sq km) off the eastern coast of Middle Andaman. The Jarawas inhabit a reserved forest of about 648 sq km on the western coast of South and Middle Andaman.

The Sentinalese are the sole inhabitants of North Sentinal Island with an area of about 47 sq km south west of Port Blair.-

The Onges live in Little Andaman with an area of 751 sq km. Until recently it was the exclusive home of the Onges, but now it has been opened up for settlement by others.

The Jarawas and the Sentinalese live in active isolation and not so friendly disposed towards outsiders. The problem the primitive tribes are facing is one of survival. While some of the primitive tribes have shown inclination to accept the modern way of life, others are yet to show them. However, there is a definite trend to indicate that they want to compromise with civilization for the sake of their own survival.

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State of Economy: As forests cover 7,130 sq km of the total area, wood-based industries have come up. Padauk and gurjan are among the most valuable timber. There are 857 small scale and handicraft industrial units besides a few large units. The large ones are located at Haddo and Chatham in Port Blair, Bambooflat in South Andaman, Bakultala and Long Island in Middle Andaman.

The products comprise sawn timber, commercial plywood, match splints and veneers. The small units are engaged in shell crafts, furniture making, bakery products, rice milling, wheat grinding, oil seeds crushing etc. Non-industrial training-cum-production centres are also functioning.

The principal crops are rice, coconuts and arecanut. Other crops are sugarcane, pulses, fruit and vegetables. It has been found that the climate is suitable for spices and rubber. Both are being tried out on the islands on a large scale.

Tourist Centres: Anthropological Museum, Marine Museum, Chatham Saw Mill, WIMCO Factory, Andaman Timber Industries, Zoological Garden, Mount Harriet, Chidiya Tapu (Bird Island), Wandoor Beach, Viper Island, Cellular Jail and Dilthaman Tank, sound and light show at National Memorial.

There are regular air and sea services between the mainland and the islands. IA flies from Delhi, Calcutta and Madras to Port Blair. Ships ply between Calcutta, Madras, Vishakapatnam and Port Blair.

Lt. Governor: Lt. Gen. R. S. Dayal (Rtd.).

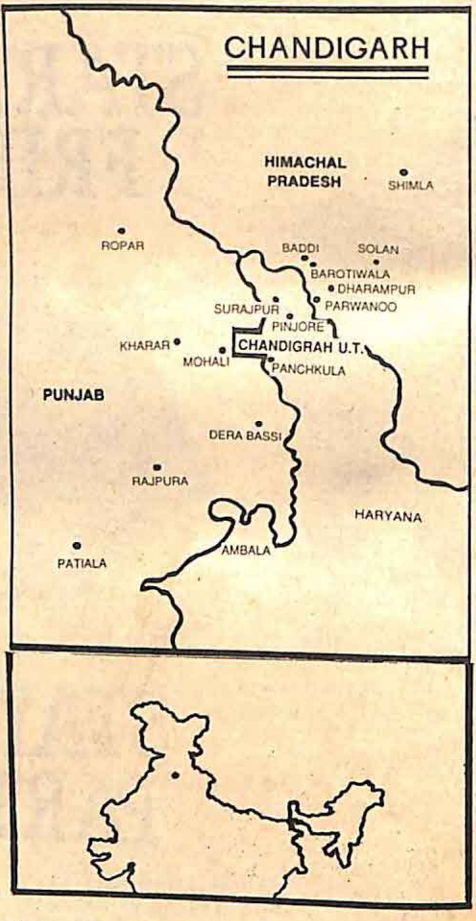
Chandigarh

Area: 114 sq km; **Capital:** Chandigarh; **Languages:** Hindi and Punjabi; **Districts:** 1; **Population:** 640,725; **Males:** 357,411; **Females:** 283,314; **Increase in (1981-91):** 189,115; **Growth Rate (per cent) 1981-91:** 41.88; **Density (persons per sq. km.):** 5,620; **Sex Ratio (females per 1000 males):** 793; **Literacy:** 78.73%; **Males:** 82.67; **Females:** 73.61.

Chandigarh has been a Union Territory since 1966. It is the capital of both Punjab and Haryana where the High Court and the University for both states are located. A planned modern city, it was designed by the French architect Le Corbusier.

Population

District	area (sq. km.)	Population 1991
Chandigarh	114	640,725



State of Economy: The Territory has 3,047 hectares of cultivable land. The irrigated area is about 2,740 ha. Wheat, maize and paddy are the major crops. The forest covers 27 per cent of the area.

There are 15 large and medium scale industrial units in Chandigarh, out of which two are public sector undertakings. More than 2,533 units are registered under small scale sector. Chandigarh gets 3.5 per cent share of the total power generated in Bhakra complex.

Universities: Punjab University, Chandigarh; Post-Graduate Inst. of Medical Education and Research, Chandigarh.

Tourist Centres: Rose Garden, Rock Garden, Shanti Kunj, Lake, Museum, Art Gallery, Capital complex and National Gallery of Portraits.

Administrator: Surendranath.

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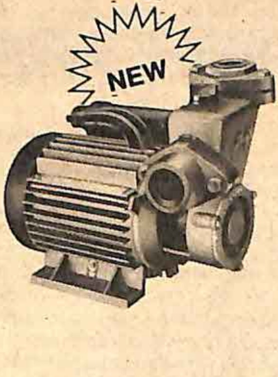

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Dadra and Nagar Haveli

Area: 491 sq km; **Capital:** Silvassa; **Languages:** Bhili, Bhilodi, Gujarati and Hindi; **Districts:** 1; **Population:** 138,542; **Males:** 70,927; **Females:** 67,615; **Increase in (1981-91):** 34,866; **Growth Rate (per cent) 1981-91:** 33.63; **Density (persons per sq. km.):** 282; **Sex Ratio (females per 1000 males):** 953; **Literacy:** 39.46%; **Males:** 52.07; **Females:** 26.10.

Dadra and Nagar Haveli lie near the west coast surrounded by the states of Gujarat and Maharashtra. It consists of two pockets namely Dadra and Nagar Haveli and these two pockets are intercepted by the territory of Gujarat.

History: The territory of Dadra and Nagar Haveli was originally assigned to the Portuguese by the Maratha government in 1779 for an aggregated revenue of Rs. 12,000/- in return for their friendship. The Portuguese ruled this territory till its liberation in 1954. After liberation, the administration was carried on by an Administrator chosen by the people themselves.

Probably this is the only part of the country which was ruled by the people themselves for about 8 years (1954 to 1961). On 11th August, 1961, the territory was integrated into the Indian Union.

Administration: The territory is under the control of an Administrator. The first group Panchayats at the village level were established in 1968 and thereafter elections are being held regularly every four years.

Population

District	area (sq. km.)	Population 1991
Dadar & Nagar Haveli	491	138,542

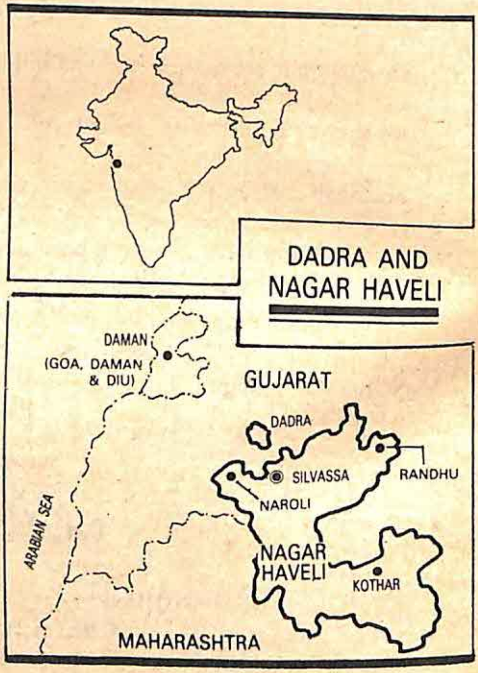
State of Economy: Agriculture is the principal occupation of adivasis who represent 79 per cent of the total population as per 1991 census. Paddy, ragi, pulses and fruits are the major crops while wheat, vegetables and sugarcane are also cultivated. About 24,430 hectares of land is under cultivation. The Department of Agriculture has taken up several schemes to explore the production potential of this area. Area under high yielding varieties during 1989-90is about 7,300 hectares. A number of new commercial crop varieties are introduced. 96 per cent of the area is under dry land farming. Hence, dry farming technology is used to get top yield by tapping rain water.

At present there are in all four industrial estates (three Govt. and one Co-operative Industrial estates) in the territory. The cooperative industrial estate is at Silvassa and the Govt. estates are one each at Masat, Khadoli and Silvassa (second phase). No. of small scale industrial units with permanent registration has increased to 516 during 1989-90. There were 96 medium scale units and 38 cottage and village scale units during 1989-90. Altogether there are 431 units which produce goods to the tune of Rs. 372 crore. Since 1988 about 60 small scale and medium scale units for texturising and twisting of polyster yarn have been set up.

The products manufactured include spectacle frames and flooring tiles, buckets, bread & biscuits, furniture, katha and tenin, spun pipes, plastic moulded articles, chemicals, detergent powder, art silk fabrics, electrical fixtures, watches, candles, tin containers, chappals, rexine cloth, foam, etc. About 8975 employees have been engaged in these industries.

There is remarkable achievement in the tourism development. There are beautiful gardens on the banks of river at Silvasa and Khanvel. A tourist complex at Khanvel has been set up. There are picnic points at the village Chauda, Madhubandam, Dadra and Bindrabin.

Administrator: Bhanu Prakash Singh; **Collector:** R. K. Verma.



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Daman and Diu

Area: 112 sq km; **Capital:** Daman; **Languages:** Marathi and Gujarati; **Districts:** 2; **Population:** 101439; **Males:** 51,452; **Females:** 49,987; **Increase in (1981-91):** 22,458; **Growth Rate (per cent) 1981-91:** 28.43; **Density (persons per sq. km.):** 906; **Sex Ratio (females per 1000 males):** 972; **Literacy:** 73.58%; **Males:** 85.67; **Females:** 61.38.

Daman and Diu were separated from Goa to become an independent union territory when Goa was accorded full statehood in 1987. These three different landblocks on the west coast of India had come to form one political unit after liberation from the erstwhile Portuguese regime in 1961.

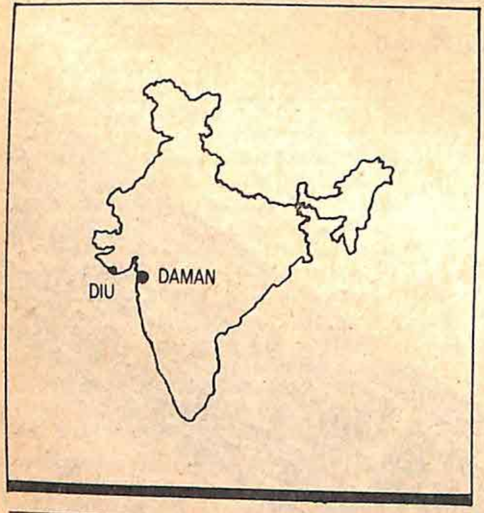
Physiography: Daman lies on the Gujarat coast while Diu is an islet on the southern fringe of Kathiawar peninsula.

Daman is bounded on the north and south by the Bhagwan and the Kalem rivers respectively, on the east by the Gujarat State and on the west by the Arabian Sea.

Diu, lies in the Gulf of Cambay near Veraval Port and is separated from the southern extremity of the Saurastra Peninsula by a narrow channel running through a swamp. The island is connected to the mainland by a narrow channel on the north. Daman has a mild and humid climate while Diu has a sultry climate.

History: Diu was occupied by the Portuguese in 1534. In 1559, Daman also was annexed by them. The inquisition which was established in Goa, largely contributed to the downfall of the Portuguese empire in the East.

DAMAN AND DIU



Under the Constitution (Twelfth Amendment) Act 1962, Goa was included in the first schedule to the constitution as a territory of the Indian Union. By the 57th amendment of the constitution Daman and Diu were separated from Goa to become an independent union territory.

Daman and Diu have no subdivisions. The Daman region is under the charge of a Collector while Diu is under the charge of a Civil Administrator.

Districts

District	Area (sq km)	Population (1991)	Head-quarters
Daman	72.0	61,951	Daman
Diu	40.0	39,488	Diu

State of Economy: Fishing is the main economic activity. Mechanised boats and other requisites are being provided.

For agriculture, area under double crop is being increased by raising irrigation potential.

All the villages have been electrified. A sub station has been set up in Diu and another one is coming in Daman.

Tourism: Both Daman and Diu having been ruled by many kings and dynasties for centuries have important historical monuments. Tourist cottages are being constructed. Beautification of the beaches and construction of garden at Nam, Daman, are on the cards.

Lt. Governor: Bhanu Prakash Singh.

Delhi

Area: 1,483 sq km; **Capital:** Delhi; **Languages:** Hindi, Punjabi and Urdu; **Population:** 9,370,475; **Males:** 5,120,733; **Females:** 4,249,742; **Growth Rate (per cent) 1981-91:** 50.64; **Density (persons per sq. km.):** 6,139; **Sex Ratio (females per 1000 males):** 830; **Literacy:** 76.09%; **Males:** 82.63; **Females:** 68.01. **Per capita:** Rs. 5,315.00.

The territory of Delhi shines with the reflected glory of a metropolis that functions as the capital of India. But beyond the confines of the metropolis and shorn of its imperial associations, this territory is better and greener.

Physiography: The territory forms an enclave inside the eastern frontier of Haryana in North India. The climate of the territory is influenced by its inland position with the desert of Rajasthan to the west and southwest and Gangetic plains of U.P. to the east. Extreme dryness with an intensely hot summer and cold winter are the characteristics of the climate. The year can broadly be divided into four seasons. The cold season starts in late November and extends to about the beginning of March. This is followed by the hot season which lasts till about the end of June when the monsoon arrives. The monsoon continues into the last week of September. The two post-monsoon months October and November constitute a transition period from monsoon to winter conditions.

History: The city of Delhi was founded in the 11th century A.D. by a Rajput Chieftain of the Tomara clan. The Chauhans obtained possession of the city from the Tomaras. Prithvi Raj, the Chauhan ruler of Ajmer and Delhi, made the city of Delhi famous by his heroic valour and romantic adventures. Delhi under Prithvi Raj and Kanauj under Jai Chand were the principal kingdoms of north India at that time.

The first invasion of India by Muhammad Ghori was beaten back by Prithvi Raj in the first battle of Tarain in 1191. Next year, Ghori came back to avenge his defeat and in the second battle of Tarain (1192) the Rajput army was routed. Prithvi Raj was captured and put to death. Delhi thus passed into the hands of Muslim rulers for the next six centuries. Under the Mughal Emperors, Delhi became a world famous city.

In 1857, following the mutiny of Indian troops, the British deposed the titular Emperor Bahadur Shah and formally annexed Delhi. In 1912, the capital of British India was transferred from Calcutta to Delhi. A new city—New Delhi—of imposing dimensions was laid out by the side of the old city—Old Delhi—by the British Indian Government. Independent India has retained this historic capital.

Administration: Delhi became a Union Territory on November 1, 1956. In order to give the representatives of the people of the Union Territory a larger measure of association with developmental activities, parliament enacted the Delhi Administration Act 1966. Under this Act, Delhi has a Metropolitan Council consisting of 61 members, five of whom are nominated by the President of India.

The Lt. Governor is the Administrator. He is assisted by 4 Executive Councillors (One Chief Executive Councillor and three Executive Councillors) appointed by the President of India on the recommendation of the Union Home Ministry.

The territory is made up of three census towns, Delhi, New Delhi and Delhi Cantt, and 214 villages. It is represented by 7 members in the Lok Sabha and 3 members in the Rajya Sabha. The territory is covered by 3 local bodies—Delhi Municipal Corporation, New Delhi Municipal Committee and Cantonment Board. The rural area of the territory falls within the jurisdiction of the Municipal Corporation of Delhi.

Delhi Districts

Census Towns	Population 1991
Municipal Committee	294,149
Delhi Cantonment	94,326
Delhi Municipal Corporation (Urban)	7,174,755
Ali Pur (C.T.)	9,265
Bawana (C.T.)	18,637
Pooth Khurd (C.T.)	8,256
Pehlad Pur Banger (C.T.)	4,826
Kanjhawala* (C.T.)	6,099
Bhalswa Jahangir Pur (C.T.)	94,888
Gokal Pur (C.T.)	49,052
Babar Pur (C.T.)	47,387
Jaffarabad (C.T.)	16,689
Gharonda Neemka Banger alias Patpar Ganj* (C.T.)	22,896
Roshanpura alias Dichaon Khurd (C.T.)	13,856
Mundka* (C.T.)	17,370
Sultan Pur Majra (C.T.)	111,253
Nangloi Jat (C.T.)	75,944
Binda Pur (C.T.)	36,148
Nasir Pur (C.T.)	81,254
Palam (C.T.)	98,968
Nangal Dewat* (C.T.)	7,523
Malik Pur Kohi alias Rangpuri* (C.T.)	3,250
Rajokri (C.T.)	11,462
Ghitorni* (C.T.)	6,253
Yahya Nagar* (C.T.)	4,405
Sultan Pur* (C.T.)	8,244
Tigri (C.T.)	33,207
Deoli (C.T.)	33,112
Pul Pehlad (C.T.)	13,907
Taj Pul* (C.T.)	5,728
Molar Band (C.T.)	19,162
Asola* (C.T.)	4,812
Delhi Municipal Corporation (Rural)	943,392

Note: * Treated as Census town for the first time at the 1991 Census. Out of these Census towns position of 4 Census towns namely Pehlad Pur Banger, Malik Pur Kohi alias Rangpuri, Yahya Nagar and Asola in whose cases the Provisional Population has been recorded as less than 5,000 will be reviewed after the final population results are available.

State of Economy: In Delhi 31.93 per cent of the total population constitutes workers (1981 census). Percentage distribution of workers according to main activity revealed that cultivators constitute 1.93 per cent, agricultural labourers 0.86%, household industry 3.76% and other workers 93.45%.

Delhi ranks third in *literacy* after Kerala and Chandigarh which hold the first and second positions. Percentage of literacy in 1981 was 61.54 (68.40% males and 53.07% females).

Delhi has a total land area of 147,488 ha of which 1443 ha area is forest and 70,642 ha is not available for cultivation. Other uncultivated land excluding fallow, comes to 4,626 ha.

About 91,757 ha is cultivated. Chief crops in 1984-85 (in 1,000 tonnes), were: wheat 117, jowar and bajra 12, sugar cane (gur) 0.04.

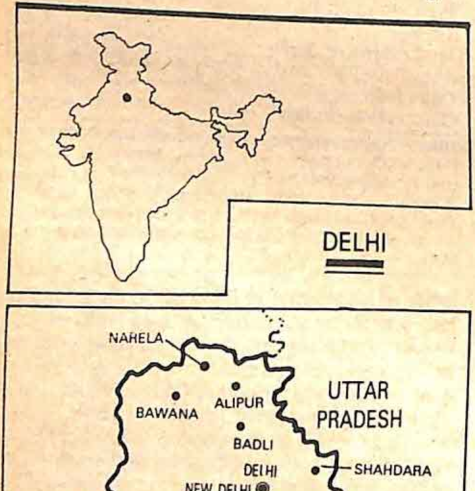
Since 1974 a large number of industrial concerns have been established. These include factories for the manufacture of razor blades, sports goods, parts for radios, bicycles, station wagons and plastic and PVC goods including footwear. The number of industrial units functioning was about 65,000 in 1985-86. The number of workers employed was 595,000, production was worth Rs. 3,450 crore and investment was about Rs. 1,260 crore.

Some traditional handicrafts for which Delhi was formerly famous, still flourish. Among them are ivory carving, miniature painting, gold and silver jewellery, etc. The handwoven textiles of Delhi are particularly fine, this craft having been successfully revived.

Universities: University of Delhi; Jawaharlal Nehru University; Jamia Milia Islamia; All India Institute of Medical Sciences; Indian Agl. Research Institute; Indian Institute of Technology; Indira Gandhi National Open University; Jamia Humdard University; National Museum Inst. of Art, Conservation and Museology; School of Planning and Architecture.

Tourist Centres: Since Delhi has been the capital of India for centuries, it is full of rich monuments. Both the Delhis—the old city of the Mughals established by Shah Jehan and the new city constructed by the British in 1931—preserve centres of tourist interest.

Among them are Rashtrapati Bhavan, Mughal Gardens, Parliament Buildings, Chandni Chauk, Red Fort, Juma Masjid, Raibat, Raj Ghat, Shantivana, Vijaya Ghat, Purana Kila (Indraprastham), Humayun's Tomb, Lodi Tomb, Qutb Minar, Haus Khas, Safdarjung's Tombs, Jantar Mantar and India Gate.



The Zoological Garden, Kashmiri Gate, Birla Mandir, Vigyan Bhavan, National Museum, Connaught Circus, Buddha Jayanti Park, Rabindra Rangsala and Nehru Memorial Museum are also of importance.

Besides, Agra, the city of Taj Mahal, Mathura of Sri Krishna legends, Tuglagabad, Surajkund, Lakshmi Narayan Temple, Sohna, Sultanpur Lake, etc. are also around.

Lt. Governor: Markandey Singh; **Chief Executive Councillor:** Jag Parvesh Chandra.

Lakshadweep

Area: 32 sq km; **Capital:** Kavaratti; **Language:** Malayalam; **District:** 1; **Population:** 51,681; **Males:** 26,582; **Females:** 25,099; **Increase in (1981-91):** 11,432; **Growth Rate (per cent) 1981-91:** 28.40; **Density (persons per sq. km.):** 1,615; **Sex Ratio (females per 1000 males):** 944; **Literacy:** 79.23%; **Males:** 87.06; **Females:** 70.88.

The tiniest Union Territory of India, Lakshadweep is an archipelago consisting of 12 atolls, three reefs and five submerged banks. Of its 36 islands covering an area of 32 sq km only 10 are inhabited. They are Andrott, Amini, Agatti, Bitra, Chetlat, Kadmat, Kalpeni, Kavaratti (Headquarters), Kiltan and Minicoy. Bitra is the smallest of all having only a population of 225 persons (1991).

Physiography: Lakshadweep lies about 220 to 440 km from the coastal city of Cochin in Kerala between 8° and 12° 13' north latitude and 71° and 74° east longitude. These islands and Cochin are linked by ship, which takes about 18 to 20 hours, and by air.

Though the land area is extremely small, if we consider its lagoon area of about 4,200 sq km, 20,000 sq km of territotal waters and about seven lakh sq km of economic zone, Lakshadweep is one of the largest territories of our nation.

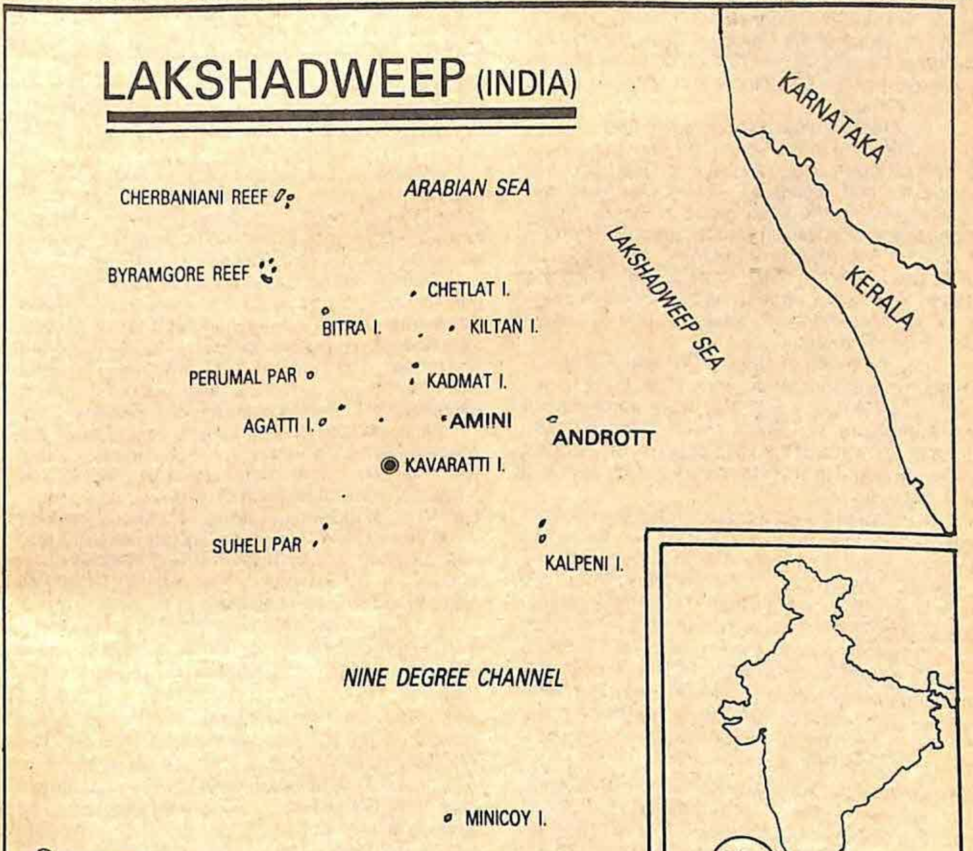
The flora of the islands includes Banana, Colocasia, Drumstick, Bread-fruit, Jack fruit and Wild Almond. Coconut is the only crop of economic importance in Lakshadweep. These are found in different varieties such as Laccadive micro, Laccadive ordinary, green dwarf, etc. Two different varieties of sea grass are seen adjacent to the beaches. They are known as Thalassia hemprichin and Cymodocea isoetifolia. They prevent sea erosion and movement of the beach sediments.

The marine life is quite elaborate. The commonly seen vertebrates are cattle and poultry. Oceanic birds generally found are 'tharathasi' (Sterna fuscata) and 'karifetu' (Anous stolidus). They are generally found in one of the uninhabited islands known as 'Pitti'. This island has been declared a bird sanctuary.

History: Early history of Lakshadweep is not recorded. Local traditions attribute the first settlement on these islands to the period of Cheraman Perumal, the last king of Kerala. It is believed that after his conversion to Islam, at the behest of some Arab merchants, he slipped out of his capital Cranganore, the present day Kodungalloor and an old harbour town near Cochin, for Mecca.

When his disappearance was discovered, search parties from different places left for the shores of Mecca in sailing boats in search of the king. It is believed that one of these sailing boats of the Raja of Cannanore was struck by a fierce storm and they were shipwrecked. After being tossed for many days in the Arabian Sea, they finally landed on the island now known as Bangaram. From there, they went to the nearby island of Agatti. Finally the weather improved and they returned to the mainland sighting other islands on their way. It is said that after their return, another party of sailors and soldiers were sent and they discovered the island of Amini and started living there. It is believed that the people sent there were Hindus. Even now, despite Islam, unmistakable Hindu social startification exists in these islands.

There are communities who are primarily land owners (Koyas), sailors (Malmis) and cultivators (Melacheris). Legends say that small settlements started in the islands of Amini, Kavaratti, Andrott and Kalpeni first and later people from these islands moved to the other islands of Agatti, Kiltan, Chetlat and Kadmat. This legend of Cheraman Perumal is



not, however, fully substantiated.

The advent of Islam dates back to the 7th century around the year 41 Hijra. Saint Ubaidulla is believed to have preached Islam to the islanders. The grave of Saint Ubaidulla in Andrott is today a sacred place. Preachers from Andrott are respected deeply in far off lands like Sri Lanka, Malaysia and Burma.

The arrival of the Portuguese in India again made Laccadives an important place for the seafarers. The finely spun coir was much sought after for ships. So the Portuguese started looting Island vessels. They forcibly landed at Amini some time in the early 16th century to procure coir but it is said that the people killed all the invaders by poisoning them. The Portuguese invasion ended thus.

Even after the conversion of the entire Islands to Islam, the sovereignty remained in the hands of the Hindu Raja of Chirakkal for some more years. From the hands of the Chirakkal Raja, the administration of the islands was passed on to the Muslim house of Arakkal of Cannanore around the middle of the 16th century.

The Arakkal rule was oppressive and unbearable. Some time in the year 1783 some islanders from Amini took courage and went to Tippu Sultan at Mangalore and requested him to take over the administration of the Amini group of islands. Tippu Sultan at that time was on friendly terms with the Bibi of Arakkal and after deliberations, the islands of Amini group were handed over to him. Thus the islands' suzerainty came to be divided—five came under the sovereignty of Tippu and the rest continued under the Arakkal rule.

After the death of Tippu in the battle of Seringapattom the islands were handed over to the British East India Company and they were administered from Mangalore. In 1847, a severe cyclone hit the island of Andrott and the Raja of Chirakkal decided to visit the island in order to assess the damage and for distributing relief.

An officer of the East India Company Sir William Robinson volunteered to accompany him. On reaching Andrott, the Raja found it difficult to meet all the demands of the people. Sir William then offered help to the Raja in the form of a loan. This was accepted. This arrangement continued for about four years but when the debt mounted, the English asked the Raja to repay, which he could not. In 1854 all the remaining islands were handed over to the East India Company for administration. So, came the British rule.

The Union Territory was formed in 1956 and it was named Lakshadweep in 1973.

Administration: Prior to the formation of this Union Territory on November 1, 1956, these islands formed part of the erstwhile Madras State. The entire group of islands is considered one district and divided into four tahsils and each put in charge of a Tahsildar, except Minicoy where the post of the Tahsildar was abolished and a Deputy Collector appointed in August, 1978. The lowest revenue official there was known as 'Amin' in the Laccadive group and Minicoy and 'Karani' in the Amindivi group. Now they are designated 'Amin' in all islands.

The Headquarters of the Administration was shifted from Calicut (Kerala) to Kavaratti Islands in, 1964.

Area and Population

Islands (inhabited)	Area (sq km)	Population (1991)
Minicoy	4.4	
Kalpeni	2.3	
Andrott	4.8	
Agatti	2.7	Total:
Kavaratti	3.6	51,681
Ameni	2.6	
Kadmat	3.1	
Kiltan	1.6	
Chetlath	1.0	
Bitra	0.1	

State of Economy: Agriculture is the mainstay of Lakshadweep's economy. Coconut production has increased from 24.5 m nuts to 25.5 m nuts in 1990-91.

Fruit plants like banana, papaya, guava, sapota and citrus varieties and drumstick plants are cultivated in the coconut gardens as inter-crops. Agricultural Demonstration Farms of the Administration in all islands supply vegetables to the people.

The islands produce copra, coir, jaggery, vinegar and fish. Trade in coir is a monopoly of the administration and is being carried on as a welfare measure on a no-profit-no-loss basis, by bartering rice for coir. The average copra production is about 2500 tonnes per annum, of which 2000 tonnes is sold through Calicut and Mangalore markets.

The islands have immense potential for the development of fisheries. Two boat building yards are engaged in the construction of mechanised boats. Over 331 mechanised boats are under operation in Lakshadweep waters, of which 313 were issued to the fishermen under hire-purchase system at subsidised cost. Fish catch during 1988-89 is estimated at 7815 tonnes. The canning factory at Minicoy possesses Tuna fish.

The main household industry is coir making. Ten coir production-cum-demonstration centres are operating at Kadmat, Chetlat, Ameni, Agatti and Andrott.

These centres produced 20.2 tonnes of improved variety thin coir yarn during 1988-89. The mechanised decorticating units at Andrott, Kadmat, Ameni and Kavaratti extracted 161.5 tonnes brown fibre from dry coconut husk during 1988-89. The hosiery factory at Kalpeni produced 38,810 vests during this period. The Handicraft Training Centres at Kavaratti is continuing to impart training to local candidates in marketing coconut shell crafts, coir crafts etc. One Furniture-Makers' Industrial Co-operative Society and one Handicraft Industrial Co-operative Society are also functioning at Kavaratti. Two Coir Co-operative societies have been started at Ameni and Kalpeni with trained local women as members. A Vanita TV Assembly Co-op. Society established in 1988.

Tourist Centres: Cheriyam, Suheli, Valiyakara and Tinakara have been identified for international tourism.

During 1989-90, 2,589 tourists visited the islands. As on 31st March 1988 there were 24 family huts, 5 beach resorts, 5 bathing huts, two honeymoon huts and one youth hostel for tourists. During 1988-89 436 foreign tourists and 1868 main land tourists visited these islands.

Agati near Bangaram was put on the air map in April, 1988 when Vayudoot service from the mainland was inaugurated.

A Rs. 15 lakh aquarium-cum-museum was opened in Kavaratti by the President R. Venkataraman in 1989.

Society for Promotion of Recreational Tourism (SPORTS) was established for the development of tourism.

On November 26, 1990 Lakshadweep Islands Division Post Office was inaugurated by the Administrator.

Information and publicity department units are operating in all the inhabited islands except Bitra. The government is publishing a daily newspaper in Mahal and a weekly in Malayalam and English.

Administrator: S. P. Aggarwal.

Pondicherry

Area: 492 sq km; **Capital:** Pondicherry; **Languages:** Tamil, Telugu, Malayalam, English and French; **Districts:** 4; **Population:** 789,416; **Males:** 398,324; **Females:** 391,092; **Increase in (1981-91):** 184,945; **Growth Rate (per cent) 1981-91:** 30.60; **Density (persons per sq. km.):** 1,605; **Sex Ratio (females per 1000 males):** 982; **Literacy:** 74.91%; **Males:** 83.91; **Females:** 65.79; **Per capita:** Rs. 3,777.00 (1984-85).

Physiography: The Union Territory of Pondicherry encompasses an area of only 492 sq km with Pondicherry town and its villages covering 293 sq km surrounded by the South Arcot District, Karaikal town and its villages covering 160 sq km surrounded by Thanjavur District, Mahe and its villages covering 9 sq km surrounded by the Kerala State, and Yanam covering 30 sq km within the East Godavari District in Andhra Pradesh. While Pondicherry, the headquarters of the Union Territory, lies 162 km south of Madras and 22 km north of Cuddalore, Karaikal is about 150 km south of Pondicherry and Yanam about 840 km north-east of Pondicherry on the Andhra Coast. Mahe lies almost parallel to Pondicherry, 653 km away on the west coast.

The French first established their foothold in Pondicherry in 1673; Karaikal was obtained from the King of Thanjavur in 1738. Mahe was handed over to the French by the ruler of Badagara in 1721. Yanam came into their possession in 1731.

Pondicherry and its surrounding enclaves lie on the drainage basin of the Gingee river. Karaikal located in the fertile Cauvery delta is fed by the waters of Arasalar (running a distance of 11.97 km in the region), Natter (11.2 km), Vanjiar (9 km), Nular (13.77 km), Puravadaiyaran (5.3 km), Thirumalirayanar (5.13 km) and the Nandalar (15.15 km).

River Mahe forms the northern boundary of Mahe town separating it from the enclaves of Kallayi and Naluthara on the north. The Coringar river, which is a branch of Gautamin Godavari river flows through the town of Yanam.

History: Pondicherry entered modern history when the French East India Company established a settlement there in 1673. The French converted this obscure little village into a flourishing trading centre. The French were the last European power to come to India for trade. The Dutch and the English had already established themselves at various centres in India. The Portuguese who came first were by this time a spent force. It was quite natural that rivalries should arise among the later powers for dominance in India. Actually what brought them into conflict in India was rivalry at home, that is, in Europe. The Dutch were the first to cross swords with the French. They captured Pondicherry in 1693 but returned it to France under the Treaty of Ryswick in 1699. Pondicherry regained its prosperity in a few years. In 1706 Pondicherry had a population of 40,000 while the English town of Calcutta had barely 22,000.

In the meantime, the French East India Company had run into financial difficulties and the Company was forced to abandon their trading posts in Bantum, Surat and Masulipatnam. In 1720 the Company was reconstituted as the "Perpetual Company of the Indies" and new French establishments sprang up in the East. Mauritius was occupied in 1721, Mahe on the Malabar Coast soon after, Yanam in 1731 and Karaikal in 1738. With the appointment of Dupleix as Governor of Pondicherry in 1742 France became involved in Indian politics. Dupleix harboured ambitions of establishing a French Empire in India.

When at last British paramountcy was established in India, Pondicherry ceased to be of any political importance and the British let the French continue in their possessions in India. The French Government handed over the Administration of their territories in India to the Government of independent India in November, 1954. The territories thus handed over were constituted into the Union Territory of Pondicherry.

Administration: Pondicherry is administered by the President through a Lt. Governor who is advised by a Council of Ministers which is responsible to the

Legislative Assembly, consisting of 33 members. Normally the Council of Ministers under a Chief Minister carries on the administration directly.

Districts

District	Area (sq km)	Popu-lation '91	Head-quarters
1. Karaikal	160	145,715	Karaikal
2. Mahe	9	33,404	Mahe
3. Pondicherry	293	590,000	Pondicherry
4. Yanam	30	20,297	Yanam

State of Economy: Nearly 45% of the population is engaged in agriculture and allied pursuits. Ninety per cent of the cultivated area is irrigated. The main food crop is rice.

Foodgrain production increased to 1,03,000 MT, from 33,293 hects. in 1990-'91 of which 93,295 MT was rice. Cash crops include oilseeds (12,895 MT) cotton, (8,367 bales of 180 kg) and sugarcane (2,47,548 tonnes).

There are 18 large 53 medium scale industries manufacturing items such asTextiles, Sugar, Cotton Yarn, Spirits and Beer, Potassium Chlorate, Rice Bran Oil, Auto parts, Soap, Amino Acids, Dispostable Syringes, Red Mud Sheets, Nylon Mono Filaments, Hard Gelating Capsules, Laundering/Washing Machines, Glass and Tin Containers, Bio Polymers, etc. There are 3,903 small scale industries. All these generate employment opportunities to 45,272 persons.

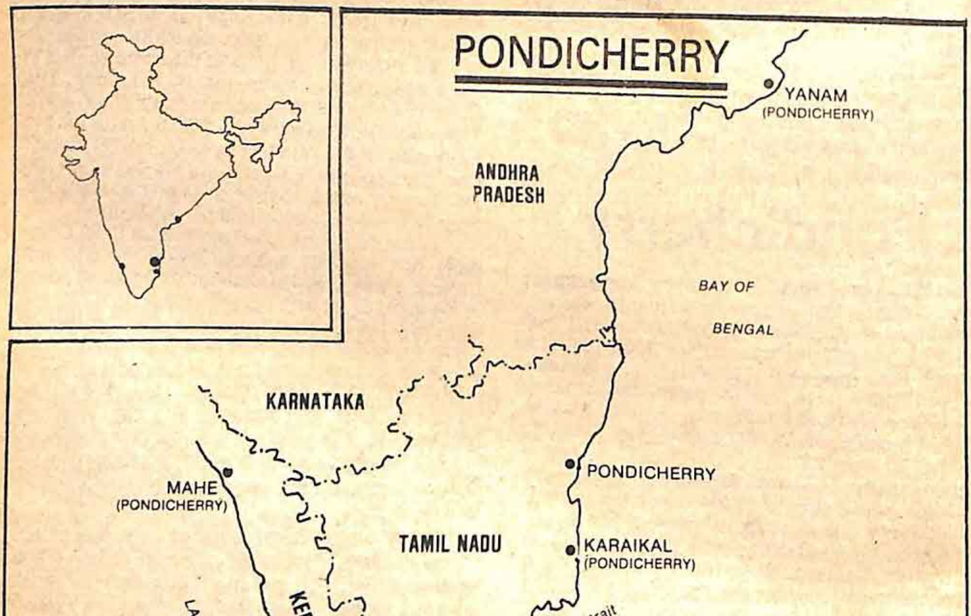
Tourist Centres: Pondicherry is a living monument of French culture in India.

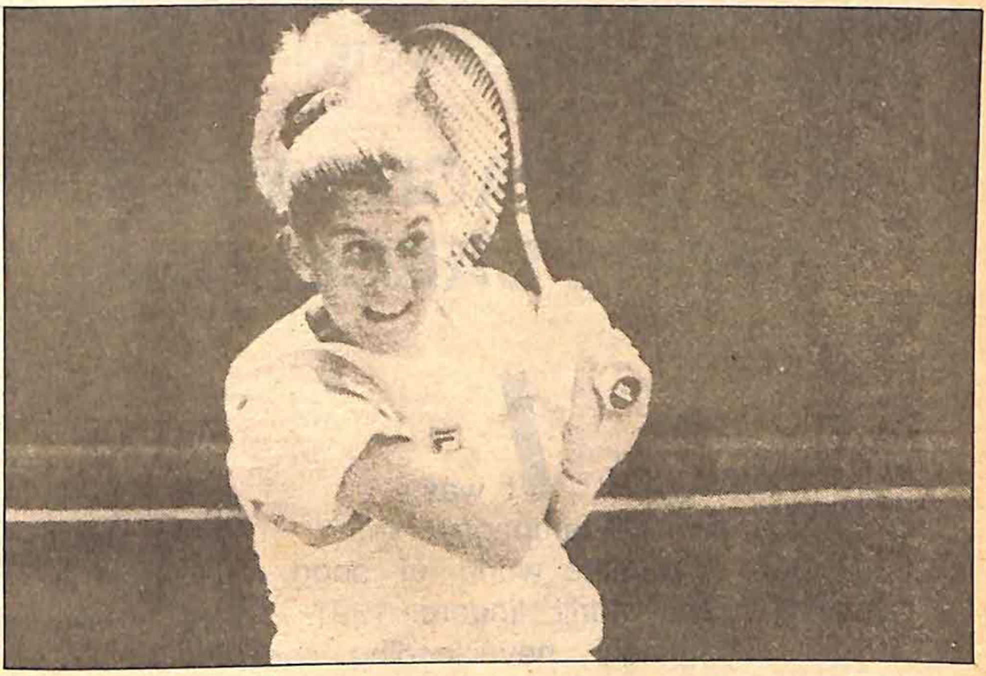
Among the places of interest are Sri Aurobindo Ashram, Government Museum, Bharathi & Bharathidasan Memorial Museum, Government Square, Botanical Garden, French Institute, Sacred Heart of Jesus Church, Joan of Arc, Manakula Vinayagar Temple, Ananda Rangapillai Mansion, Auroville and Boat Club at Chunnambar river.

Pondicherry Tourism has introduced a package of holiday and adventure sports.

The part of the Pondicherry Union Territory called Karaikal lying in an enclave of Tamil Nadu about 130 kms south, has got important places such as Arasalar Boat Club, Thirunallar Saneeswar Temple and Karaikal Ammaiyar Temple.

Lt. Governor: Dr. Har Swarup Singh; **Chief Minister:** V. Vaithilingam.





PART FOUR

WORLD OF SPORTS

SPORTS UPDATE

A CHAMPAGNE YEAR BEFORE BARCELONA

It was a champagne year for the world of sport. The thrill lingers. 1991 – a seemingly never-ending carnival of sporting excitement of the highest order. The flood of adrenalin has not yet ebbed. Whether it be in Tokyo with Mike Powell and Carl Lewis, or on the desert sands of Sharjah with Aquib Javed and Sachin Tendulkar, or in Tilberg with Viswanathan Anand and Gary Kasparov, the spirit was simply extra terrestrial! And, 1991 shall not simply be a mere part of history. It's very special, for, it opened the door to let in the light on a patch of darkness which marred the face of history: Yes, it's welcome to South Africa!

The year prior to Barcelona Olympics and the World Cup Cricket down under, proved to be a perfect run up for greater excitement in store. The stage is thus set for 1992. It's over to Barcelona.

The world Athletic championship in Tokyo could as well be the show piece of the byegone year. Mike Powel overleaped Bob Beamon at sea level and reached for the stars. It had been 23 years since Beamon immortalised the Mexico city Olympic stadium by that incredible leap of over 29 feet. When the world expected Carl Lewis to break the barrier, Mike Powel struck like lightning out of the blue. Beamon is history and Powel has arrived. This one jump overshadows all the other glitter of achievements of last year.

But Tokyo was in August, January was in India, Calcutta, to be precise. The Indian Cricket team won the Asia cup beating Srilanka. Kapil Dev's hatrick (31/4) was perhaps the only highlight of an otherwise lacklustre tournament. Far away, in Sydney, Australia retained the Ashes beating England 3–0 in the five best series, two of which ended in draw.

In Melbourne, Boris Becker won his first Australian open tennis title beating Lendl and Yugoslavia's Monica Seles became the youngest Australian open champion when she beat Jana Novotna.

January was also the first successful move by Indian Grandmaster Viswanathan Anand for a sensational year. In Madras, Anand beat the Soviet Alexci Driev to qualify for a match against former world champion Anatoly Karpov. In the world chess quarterfinal in Brussels, Anand gave Karpov a run for his money, beating him once but bowing out finally.

At the Linares International chess tournament in February. Anand beat Karpov in the second round and held the world champion Kasparov to draw in the eleventh. The title went to Vasily Ivanchuk. Anand finished third but proved that he belongs to the upper strata of world chess. Anand's most sensational performance came in October. At the Interpolis chess championship, the Indian Grand Master fought with the cream of world chess. He beat Kasparov, and Jan Temman (Holland) and drew with Karpov and Kovchnoi. Anand is the first ever Asian to participate in this championship which is exclusively for GMs.

While on chess, hats off to Dibyendu Barua and Bhagyasree. In January Barua became India's second Grand Master while winning the Duncan super chess in Calcutta. Bhagyasree became the 3rd Indian to win the Asian women's title – Bhopal, October.

The Indian Davis Cup Tennis squad made a promising start in February. They beat Thailand 5–0 in Bangkok. Later they overcame Indonesia in Jaipur (4–1) and South Korea in Delhi (3–2). But in spite of valiant efforts by Leander Paes and Ramesh Krishnan, India lost to Brazil in the world group qualifying round.

April was cruel to the great George Foreman. The 42-year-old 116.5 kg. heavy former world champion lost to the holder Evander Holly Field in heavy weight challenge bout in Atlantic city. For Holly Field, 14 years younger than the hunky Foreman, it was not easy victory. Foreman fought like a lion for 12 rounds full, in spite of his age and overweight.

The Indian paddlers made it good in April. They finished runner up to England and Hongkong in men and women category of the Commonwealth Table Tennis Championship in Nairobi. India's Kamalesh Mehta finished runner up in men's singles to Johny Huing of Canada (13-21, 12-21, 17-21).

April was wedding bells for the golden girl P.T. Usha. She became Usha Srinivasan on April 25. Srinivasan (C.I.S.F.) is a former university kabadi star.

If it is May, it must be Paris; if it's clay, it must be French open. The packet of clay court magic was delivered in style by the Lefty American Jain Courier who blasted off the glamour kid Andre Agassi in straight sets. Monica Seles repeated her Australian victory. In Paris, it was Arantxa Sanches who fell prey to Monica in straight sets.

The Year of the Winners: Carl Lewis, Katrin Krabbe, Viswanathan Anand, Vivan Richards.

Winning Streak...... Michael Stich, Monica Seles, Leander Paes, Shiny Wilson.

Back home, in May, Kapil Dev lead Haryana to its maiden Ranji trophy victory, beating Bombay by 3 runs. Aswini Nachappa ruled the roost in Calcutta National Athletic meet winning gold in 100 mts, 200, 400 and 4 x 100 relay.

June belonged to Mike Tyson who once again beat Rudok in 12 rounds. July celeberated Wimbledon witn the Germans. In an unprecedented men's singles final, two Germans, Michael Stich and Boris Becker clashed. Stich stuck to the title – an unbelievable straight set distinction of the former champ. Steffi Graf returned to the top to make it a German double.

August bid farewell to the swashbuckler from the Caribbeans – Vivian Richards. At the oval, England, Richards played his last test.He will be back for the world cup later, but test cricket is so much dull without Viv.

The Pan American Games in Havana, Cuba proved to be a good diplomatic effort as well, to bring the not-so-Chummy U.S.A. and Cuba together.And, after 40 years, U.S.A. failed to bag the first place.

The world Athletic championship in Tokyo stole the thunder from everything else. Carl Lewis's blitzkrieg to win the sprint in world record, and another in the relay mesmerised the world of sport.And then came Mike Powel's gigantic leap. Katrin Krabbe of Germany was undoubtedly the queen of the track. She shattered the seemingly invincible Merlene Ottey of Jamaica, not once but twice. She won the sprint double. Three world records were bettered. Carl Lewis in 100 mts (9.86 secs), Powel in long ump (8.95 mts) and USA (Andre Cason, Leroy Bwell, Dennis Mitchel, Carl Lewis) in 4x100 relay 37.50 sec.).

U.S. Open in September was practically a Jimmy Connors show. He battled his age till semifinals and von the hearts of the spectators. His achievement vas much more applauded than the winners Steffan Edberg and Monica Seles.

India had a share of glory when Leander Paes won the U.S. Open, beating Morocco's Karim Alami 6–4, 6–4, 6–4. Paes is the first Indian to win more than one junior grand slam titles. He had won junior Wimbledon last year and came second in Australian Open (Junior).

With Sharjah cup and Asian Track and Field meet, Kualalumpur, October's cup was full. Pakistan won the Sharjah cup beating India. Aquib Javed's hatrick and Sachin Tendulkar's mesmerising batting lit the desert sand with excitement. Kapil bcame the first to reach 200 wicket mark in one-day cricket. However, Sharjah cup ended in controversy. Fixing the matches and influencing of the umpires in favour of Pakistan were alleged.

South Africa, whose ban had been withdrawn by the International Amateur Athletic Federation and the I.O.C. earlier, was allowed to take part in world cup cricket too. These ended the longest ban on a sporting nation in history.

After P.T. Usha, it is Shiny Wilson. Shiny, now a mother, made a scintillating comeback in Kualalampur. At the Asian meet, she won two golds (one in relay) and a silver. Once again, like in P.T. Usha's days, Indian Gold turned out to be a Kerala girl's contribution.

Perhaps the most historical sporting event was kept in store for November. The South African cricketers came into the open world for the first time officially. They landed in India for a series of three one-day matches. The welcome was unprecedented. The South Africans came soon after the last minute withdrawal of Pakistan from a five match Indian tour, citing security reasons. Thus, South Africa is now a part of the family.

By **Raghava Varma** of Malayala Manorama, who was accredited Reporter to Asian Games, Seoul. ■

Germany: The Year After

Unified Germany is one year old, and it has been good times, sportingly, for the country. Germany won more sports medals than any other country since October 3 last year.

Michael Stich, Boris Becker and Steffi Graf made it an all German crowd at Wimbledon. It was Stich who beat Becker and Stefi took the women's title for a brief return as world number one.

Eastern Germany's sprint star Katerin Krabbe created the biggest upset at Tokyo world meet with two gold medal victories over Jamaican favourite Merlene Ottey.

This year Germans scooped 89 medals including 30 gold, at world championships in 12 of the 25 sports on the 1992 Barcelona Olympics Calendar. The Soviets won 88 and U.S. 72.

However, the much acclaimed East German athletes failed to generate enthusiasm, as was expected. There was allegation that the former East German government had run massive doping programmes. The demise of the East German system of handpicking talented children for international sports careers has also contributed to the decline in standard of their performance.

At the 1987 Rome world meet, the East Germans had won 31 medals including 10 golds. In Tokyo, a United Germany could win only 17 medals, five of them gold.

During the last two decades, swimming was almost-an East German show. It was practically a one sided affair. But during the last world meet in Athens, Germany won only two gold medals.

False Start!

The greatest of all sprints, the 100 metres in which Carl Lewis set a world record in Tokyo should not have been run. Dennis Mitchell, who finished third, made a false start, wrote The Independent, London.

The electronic meters installed in each runners' starting blocks revealed that Mitchell reacted more quickly than it is judged humanly possible, and conveyed that information instantaneously to the starter.

Unfortunately, Tadanobu Nozaki, the Japanese university professor who was responsible for starting the race, had decided not to wear the headphones through which he would have heard Mitchell's move as an acoustic signal.

The International Amateur Athletic Association made it clear that the starter's decision is final and that technology in any case is only there to "assist" him. They will consider whether starters should be bound to wear headphones at a meeting in October.

The Briton, Linford Christle, who finished a place behind Mitchell, declined to make an issue of it. "The 100 is history," he said. "I wouldn't accept a medal now if they offered it to me." A team spokesman said any protest would be "churlish" but it would also have been invalid since it would have to have been made within 30 minutes.

Shiny: Two for The One Back home

Shiny Wilson is back...... with... how many golds? One..... two.... three....?

Shiny mothered little darling Shilpa. No doubt, her first and foremost golden prize. Then she returned to the tracks in Kulalampur for two other golds- two for the one back home.

There has been women athletes doing well, getting married, coming back and doing well again. But think about a girl who was champion in her event at national level for a long time. She turns the family way. Then returns to conquer a continent- That's Shiny- a mother and an Asian Champion.

Shiny's effort at Asian meet in Kulalampur was superlative. She won silver in 800, gold in 400 and gold again as a part of the relay team.

Shiny now hopes to get ready for the next Asiad, but herself admits that, beyond that she doesn't know.

Flight into History: The

Bob Beamon did not expect his 1968 record of 29 feet and 21/2 inches to last more than 30 minutes! It lasted for 23 years. One hell of a leap from Mexico city 1968 to Tokyo 1991!

While the one and the only Carl Lewis was revving up on the runway, Mike Powell was just another name on the entry sheet. Powell, so prone to making fouls that his friends used to call him 'Mike Foul'. But, that Friday in Tokyo, Powell took off perfectly and landed 20 feet 41/2 inches into history.

That Lewis himself had never achieved 20 feet, gave Beamon's record that much more of an aura. The one who came nearest to it was Robert Emmiyan of Soviet Union in 1987 -29 feet.

The-27-year old Philadelphian, Mike Powell's best before Tokyo was 28.5. He began his career as a basketball player.

"I have tremondous respect for Beamon", Powel said in Tokyo, "But I don't think I got the same respect from him."

Beamon has worked in Miami for years, now as a supervisor with the Dade County Department of Parks and Recreation. When reached for a comment after his record fell, he congratulated Powell but said he had always assumed it would be Lewis who broke it.

Powell was not surprised to hear that. He had met Beamon twice, he said, in 1985 and 1989. Then, last month during the U.S. Olympic Festival, their paths almost crossed again. "I saw him walking out of the stadium as I was on the runway," Powell said, "I took personal offence at that. I was thinking, "Don't walk away while I'm on the runway." So naturally, this was extra special to me."

At the Dade County Parks office in Miami, Beamon himself admitted that he was "a little confused with the person that set the record. I was thrown off by not hearing the other name, which would be Carl Lewis."

Yet, while he spoke graciously of being happy for Powell, there was a tinge of pride as he said, matter-of-factly: "When I broke the record, I broke it by almost two feet. It was a jump way before its time and it almost made it into the 21st century."

Beamon saw himself in a pantheon of American sports heroes. He described the feat as belonging with Jesse Owens' four Olympic gold medals in 1936, Joe DiMaggio's 56-game hitting streak in 1941 and Wilt Chamberlain's one-game 100-point performance in 1962.

There were many ironies surrounding Beamon's 1968 leap. Although he smashed, the previous record by 21 inches, he never again soared 29 feet. Or 28 feet. Or even 27 feet. In fact, the best he ever jumped again was 26-11, and did it off the wrong foot.

Because his jump was at altitude-more than 7,000 feet above sea level-some suggested it was a tainted record.

But Dick Schaap, Beamon's biographer in a 1976 book called "The Perfect Jump," recalled that he had asked Cornell University physicist to analyse the record and what impact the altitude had on it.

"All these factors would account only for inches," the physicist told Schaap. More important, he concluded, was the three-foot

lift Beamon generated in his leap, about a foot higher than most other, long jumpers.

But Beamon avoided a wider controversy at the Games. Two of his teammates, John Carlos and Tommie Smith, were sent home because, on the victory stand, they had raised their fists in the black-power salute.

Back in the States, he passed into history. :I never look at it as anything has been stolen from me, "I enjoy all the things that have come to me, the friendships and the comradeship."

Carl Lewis and Mike Powell have always remained friends in spite of being rivals on the runway. But Lewis' comment after Powell's jump hints that it was not all strawberries and cream between them. "It was the greatest jump of his life," Lewis said, "and he may never do it again."

Longest 30 Mts.

The fire was ignited early for Powell. He was a point guard for his high school team in West Covina, and made his mark as one of the few players at his position with the temerity to slamdunk on the league's centres.

College scouts admired his dunking ability but worried he could not dribble well enough to play at the Divisional level, so he ended up at the University of California-Irvine on a track sholarship, high jumping. A year later, in 1983, he tried the long jump and reached 26-5 1/2 on his first-ever effort.

This guy is now history–Mike Powell holding the picture of Bob Beamon's historic jump.

Enter the Dragon

The 11th Asian Games in Beijing in 1990 proclaimed that China is here to stay....

The gap is narrowing. Asia is no longer a spectator in the world of sports. The monopolistic Western dominance is being challenged. Seoul sounded the warning note. In Beijing it was sealed and delivered – the arrival of China—the dragon country.

Beijing Asian Games is notable for this change of fortunes. China dominated in all the arenas barring a few like Kabbadi, Sepak Thakraw, etc. The world's most populous nation has rolled over all the Asian countries and is all set to bridge the gap between them and the best in the world. Come the 2000 Olympics, (especially if it is held in Beijing). World champions from the west will just be 'also rans'. That in all probability, is the warning from Beijing 1990.

What is Asia minus China after all? If we take Beijing as the score board, the answer is 'zero'. China stands like a colossus before the tiring but fighting Japan and the Koreas, not to say about India. The loss of Japan and Korea is China's gain. China captured the number one spot from South Korea with just one gold difference in Seoul four years ago. But in Beijing it amassed 129 golds more than Korea and consolidated the position. Japan the one time champions of Asia was relegated to third position with only 38 golds. China dominated in events which had good medal potential like Swimming, Gymnastics, Cycling, Athletics, Shooting, Whushu, etc. They smashed the supremacy of Japan in swimming and even in canoeing. Of course they had some setbacks in Athletics and Badminton. But the real shock for China was the defeat in football at the hands of Thailand in the quarter finals.

However at Beijing it was a game of higher international degree with seven world records being rewritten and a series of Asian games records tumbled. A record number of 98 Asian Games records were broken along with 42 Asian marks. Nine equalled Asian records and five came equal to world marks.

A total of 52 athletes surpassed Asian marks and 109 improved upon the Asian Games record. The number of record breaking performance itself was a record in Beijing – 194. It is 15 more than in the Seoul Asiad.

High standard performance was seen in weight lifting, badminton, T.T., gymnastics, diving, shooting etc. Chinese women lifters amazed the world with record breaking heaves. In swimming and track and field also the winners touched world and olympic standards.

The games in fact started on an unpleasant note, as Iraq was debarred from the games in view of that country's forcible occupation of Kuwait. The decision was taken by the Olympic Council of Asia just 48 hours before the start of the Games. In the general council 27 members voted for the expulsion while three opposed the motion.

In Track and Field, the glamour event, China won 28 out of the 43 gold medals at stake. Japan with seven gold came second and tiny Qatar was third with three. South Korea could come nowhere near their runners up performance at Seoul—86 and finished fourth with just two golds. In Seoul, South Korea had won 11.

The performance in Beijing was closer to world standards than in any other past Asian games. This was the opinion shared by Chi Cheng, one time woman's world record holder from Chinese Taipei and Mani Jegatesan, former world ranked sprinter from Malaysia.

"We have seen some world-class performances, especially in field events, from the Chinese and they have pulled the rest of Asia to international standards", Said Jegatesan.

The ageing athletes of Japan and Korea were upset by the new and young generation of Chinese stars, reaching world standards. Triple jumper Chan Yan Ping's 17.51 m mark is rated fifth in the world and the 5.62 m performance of polevaulter Liang Xueren, comes among the top ten performances in 1990.

Chi Cheng points out, the 100 m hurdler Liu Hua Jin, who overcame a knee injury to set an Asian record of 12.73 sec. and says 'any time below 13 seconds is world class'.

China's jumpers and walkers were also near world standards.

But the glamour boy of the meet was Mansoor Talaal of Qatar who retained the 100 m sprint title after four years. His teammate Mohammed Sulaiman established himself as Asia's best long distance runner winning 1500 and 5000 metres. The success of Qatar is attributed to the training given to their athltes abroad and at home by foreign coaches.

Medal Tally

	G	S	B	Total
China	183	107	51	341
S. Korea	54	54	73	181
Japan	38	60	76	174
N. Korea	12	31	39	82
Iran	4	6	8	18
Pakistan	4	1	7	12
Indonesia	3	6	21	30
Qatar	3	2	1	6
Thailand	2	7	8	17
Malaysia	2	2	4	8
India	1	8	14	23
Mongolia	1	7	9	17
Philippines	1	2	7	10
Syria	1	0	2	3
Oman	1	0	0	1
Taiwan	0	10	21	31
Hong Kong	0	2	5	7
Sri Lanka	0	2	1	3
Singapore	0	1	4	5
Bangladesh	0	1	0	1
Burma	0	0	2	2
Laos	0	0	1	1
Macau	0	0	1	1
Nepal	0	0	1	1
Saudi Arabia	0	0	1	1

The Fastest in Asia: Mansoor Talaal of Qatar who won 100 m.

The gender gap

The gender gap is widening. Women outshone men in the Beijing Asian Games. Women constituted only 40 percent of the total strength of the teams but accounted for 60 percent of the medals amassed.

Mao Tse-Tung declared once "Women hold up half the sky". He was pleading for equal rights even in sharing burdens for both the sexes. The women have now done one up in sports. Event after event, they surpassed male compatriots to win laurels and to reach world class standards.

"The women are more enthusiastic and dedicated" Li Furong, Secretary General of Chinese team tries to trace the reason for this female take- over. His hope now vests in women to narrow the gap between the West and Asia in the field of sports. In Seoul Olympics, China won five golds, of which three were by women.

Weight lifting is a new field for women. Still there are about ten lac women weight lifters in China and they are hopeful to bring colours to the country in the coming Olympics. Out of the 29 world records 21 are held by Chinese girls. Chinese women, though novices in the sports field are amazing the world smashing records after records including world Mark.

Xing Fen, a student from Hainan Island lifted 165 kg in the 44 kg class which is four times more than her body weight. Seven world records were re-written in Beijing of which five were by women. Two by Chinese lifters, one by South Korean archer, one by Chinese cyclist and one by the Chinese sharp shooters.

In swimming too Chinese women are superior to men. In Seoul olympics they won three silvers while the men got none. After the medal sweeping in Beijing Asiad Chinese women are on the way to break olympic and world records, in Barcelona – 1992, which their male team mates are not even able to dream of.

"Asian women are more quiet, obedient and calm. They are easier to coach", says Chi Cheng, the one time world track and field women's sprint record holder from Taipei.

This phenomenon of woman power is spreading to other parts of Asia, according to Chi Cheng who is now the President of the Taipei Track and Field Association. The former 100, 200, 400 and hurdles world champion cited the examples of P.T. Usha and Lydia Devega of Philippines.

Multiple gold medal winners in Beijing

Five golds

Swimming: Shen Jianquang (China) men's 50 m, 100 m freestyle, 100 m butterfly, 400 m freestyle and medley relays.

Four golds

Swimming: Zhuang Yong (China), women's 100 m, 200 m freestyle, 400 m freestyle relay, 400 m medley relay.

Lin Li (China) women's 400 m individual medley, 200 m breaststroke, 200 m individual medley, 200 m backstroke.

Yang Wenyi (China) women's 50 m and 100 m backstroke, 400 m freestyle relay, 400 m medley relay.

Wang Xiachong (China), women's 100 m and 200 m butterfly, 400 m freestyle relay, 400 m medley relay.

Shooting: Xu Haifeng (China), women's free pistol, individual and team—air-pistol, team—centre-fire pistol, team.

Three golds

Swimming: Xie Jun (China) men's 200 m freestyle, 400 m freestyle and medley relays.

Gymnastics: Li Jing (China) men's gymnastics—team and individual all-round, vault.

Chen Cuiting (China) women's gymnastics—team and individual all-round, floor exercise.

Guo Linyue (China) men's gymnastics—team, pommel horse, parallel bars.

Shooting: Ji Gang (China) men's running target, individual and team running target (mixed run), team.

Zhang Qiuping (China), women's small-bore standard rifle (prone), individual—air rifle, team—small-bore rifle, team.

Xu Yanhua (China), women's small-bore rifle, individual and team—air rifle individual.

Huang Shiping (China), men's running target (mixed run), individual and team—running target (normal run) team.

Li Duihong (China) women's sport pistol, individual and team—air pistol, team.

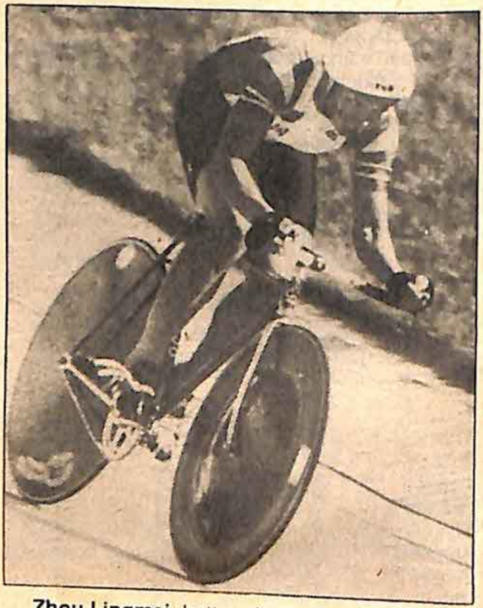
Wang Lina (China) women's air pistol, individual and team—sport pistol, team.

Wang Yifu (China) men's free pistol, team—air pistol, team—standard pistol, team.

Wang Runxi (China) men's rapid fire pistol, individual—centre-fire pistol, team—standard pistol, team.

Table tennis: Deng Yaping (China) women's singles and team, mixed doubles.

Canoeing: Chun-In-Shik, (S. Korea), men's 1,000 metre kayak singles, 500 and 1,000-metre kayak pairs.



Zhou Lingmei: bettered a six-year-old world mark in 1 km cycling time trial.

Archery Machine: Kim Soo-Nyung of Korea who set world record of 345 points.

Two golds

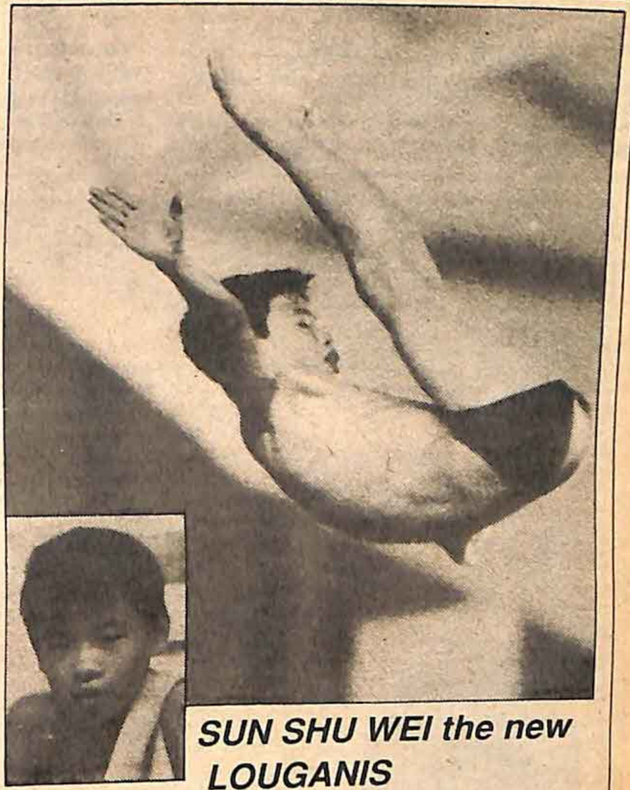
Track and field: Zhong Huandi (China) women's 3,000 m, 10,000 m; Mohammed Sulaiman (Qatar) men's 1,500 m, 5,000 m; Tian Yumei (China) women's 100 m, 400 m relay; Li Guilian (China) women's 400 m, 1,600 m relay; Li Wenhong (China) women's 800 m, 1.600 m relay; Chen Juying, women's 400 m hurdles, 1,600 m relay.

Swimming: Tomohiro, Noguchi (Japan) men's 400 m freestyle, 800 m freestyle relay; Yan Ming (China) women's 400 m, 800 m freestyle; Huang Xiaomin (China) women's 400 m, 800 m freestyle; Huang Xiaomin (China) women's 100 m breastroke, 400 m medley relay; Lin Laijiu (China) men's 100 m backstroke, 400 m medley relay; Chen Jianhong (China) men's 100 m breaststroke, 400 m medley relay; Takahiro Fujimoto (Japan) men's 100 m breaststroke, 400 m medley.

Diving: Gao Min (China) women's one-metre springboard, team; Xi Yanmei (China) women's platform, team; Tan Liangde (China) men's one-metre springboard, team: Sun Shuwei (China) men's platform, team.

Gymnastics: Li Xiaoshuang (China) men's gymnastic team, floor exercise; Li Ke (China) men's gymnastic team, rings; Fan Di (China) women's gymnastic team, uneven bars.

Shooting: Wang Yujin (China) women's trap, individual and team; Ryohei Koba (Japan) men's small-bore rifle, prone-individual—air rifle, team; Pae Won Guk (North Korea) men's trap, individual and team; Zhang Shengge (China) men's air pistol, team and individual; Lee Eun-Chul (South Korea) men's small-bore rifle, 3 × 40, individual and team; Wang Hui (China) men's standard pistol, individual and team; Zhang Shan (China) women's skeet, individual and team; Park Byung-Taek (South Korea) men's centre-fire pistol, individual—rapid-fire pistol, team; Zhang Ronghui (China) men's running target, team, mixed and fast runs; Shu Qingquan (China) men's running target, team, normal and fast runs.



SUN SHU WEI the new LOUGANIS

Sun Shu Wei —Age: 14 years, Weight 35 kg; He dethroned a champion, XION NI.

Sun Shu Wei was China's teenage wonder at Beijing. He bagged two gold medals —one in platform diving and the other in team event. Sun, a school boy from Guang Dong province, registered his first victory over his team mate, 16 year old Xion, by a perfect 10.

'He has the potential to be the next Greg Louganis —America's diving sensation—and would dominate the sport for years.' said U.S. coach Doug Ingram, about Sun. But Sun's coach Xu Yiming who trains Xion also will not discriminate between the two. 'Both are world class' says he. Xion had won a silver medal in the Seoul Olympics, and Louganis the Gold.

Cycling: Park Min-Su (South Korea) men's four-kilometre individual pursuit, 50-kilometre points race; Keiji Kojima (Japan) men's one-kilometre time trial, four-kilometre team pursuit; Tang Xuezhong (China) men's 177.99-kilometre road race, 100-kilometre team time trial.

Golf: Shigeki Maruyama (Japan) men's individual and team; Won Jae-Sook (South Korea) women's individual and team.

Fencing: Ye Chong (China) men's foil, individual and team; Wang Zhiming (China) men's sabre, individual and team; Zhai Xiumin (China) women's epee, individual and team, Yang Dal-Shik (South Korea) men's epee, individual and team.

Table tennis: Ma Wenge (China) men's singles, doubles.

Tennis: Pan Bing (China) men's singles, team; Yayuk Basuki (Indonesia) women's doubles, mixed doubles; Akiko Kijimuta (Japan) women's singles, team; Meng Qinghua (China) men's doubles, team.

Canoeing: Park Cha-Keun (South Korea) men's 500 m and 1,000-metre kayak pairs.

Archery: Yang Chang-Hoon (South Korea) men's individual and team; Lee Jang-Mi (South Korea) women's individual and team.

Shen Jianqiang: 5 gold in swimming.

A flower Bloomed in Pain

With five pain killer injections he romped home with five gold medals for China. That is China's wonder boy, Shenjian Qiang.

This 22-year old college student from Shanghai was China's best bet in the swimming pool, but he developed back pain spreading a pall of gloom in the camp. He had to be given pain killer injection before plunging into the pool each time—five in all. He won individual gold in 100 m butterfly, 100 m free style, 50 m free style and team gold in 4x100 m individual medley relay and 4x100 m free style relay. Shen, the 100 m free style Asian record holder, had won the event in the Seoul Asian Games also. Shen got the highest individual gold tally of the games. Five golds including two relays, with records in all five.

ASIAN GAMES

The origin of Asian Games goes back to 1947 when the Asian Relations Conference held in New Delhi decided to organise an international games meet for Asian countries on the lines of Olympic Games, once in four years. Since then the games have grown to become Asiad—the biggest sports festival in Asia. The games have been held in the following venues.

Year	Venue	Country
1951	New Delhi	India
1954	Manila	Philippines
1958	Tokyo	Japan
1962	Jakarta	Indonesia
1966	Bangkok	Thailand
1970	Bangkok	Thailand
1974	Tehran	Iran
1978	Bangkok	Thailand
1982	New Delhi	India
1986	Seoul	South Korea
1990	Beijing	China

The 1994 Asian Games will be held in Hiroshima, Japan.

ATHLETICS

National Open, Calcutta: Overall: Railways.

Men: Railways, Services, *Women:* Railways, Karnataka. Aswini Nachappa won four golds: 100 mts, 200 mts, 400 mts & 4x100 relay.

Junior Nationals, Cuttack: 1. Orissa 2. Delhi 3. Punjab.

Inter State Meet, Gandhinagar: Overall Champion: Delhi (115 points) 2. Kerala (111).

European Athletic Meet, Frankfut: 1. Soviet Union (114 points); 2. England (110.5) Germany (108).

Pan American Games, Cuba: 1. Cuba; 2. U.S.A.

Permit Meet, Delhi: Kenyans (16 Medals) stole the show. Indians won 5 Bronzes. Shiny Wilson (Bronze in 800) and Bahadur Prasad were adjudged best Indian Athletes.

Asian Track and Field Meet, Kulalampur. 1. China (24 Gold, 11 Silver, 2 Bronze). 2. Japan 4–7–12; 3. Qatar 4–3–1. India finished fifth (2–4–2).

Atheletics World Championship, Tokyo

100 m: 1. Carl Lewis (USA) 9.86s (WR); 2. Leroy Burrell (USA) 9.88; 3. Dennis Mitchell (USA) 9.91.

200 m: 1. Michael Johnson (USA) 20.01s (NMR); 2. Frank Fredericks (Nam) 20.34; 3. Atlee Mahorn (Can) 20.49.

400 m: 1. Antonio Pattigrew (USA) 44.57s; 2. Roger Black (GBr) 44.62; 3. Danny Everett (USA) 44.63.

Asian Games Record

Following are the digests of the past 11 Asian Games held between 1951 and 1990 (tabulated under year, venue, participation, sport and top three finishers):

1951: New Delhi, India: 489 athletes from 11 countries and regions, 6 sports, 1. Japan, 2. India, 3. Iran.

1954: Manila, the Philippines: 967 athletes from 18 countries and regions, 8 sports. 1. Japan, 2. Philippines, 3. South Korea.

1958: Tokyo, Japan: 1,422 athletes from 20 countries and regions: 13 sports. 1. Japan, 2. Philippines, 3. South Korea.

1962: Jakarta, Indonesia: 1,545 athletes from 17 countries and regions: 13 sports. 1. Japan, 2. Indonesia, 3. India.

1966: Bangkok, Thailand: 1,945 athletes from 18 countries and regions: 14 sports. 1. Japan, 2. South Korea, 3. Thailand.

1970: Bangkok: 1,752 athletes from 18 countries and regions: 13 sports. 1. Japan, 2. South Korea, 3. Thailand.

1974: Tehran, Iran: 2,357 athletes from 25 countries and regions, 16 sports. 1. Japan, 2. Iran, 3. China.

1978: Bangkok: 2,879 athletes from 25 countries and regions, 19 sports. 1. Japan, 2. China, 3. South Korea.

1982: New Delhi, 3,411 athletes from 33 countries and regions, 21 sports. 1. China, 2. Japan, 3. South Korea.

1986: Seoul, South Korea: 3,345 athletes from 27 countries and regions, 25 Sports. 1. China, 2. South Korea, 3. Japan.

1990: Beijing, China: 4684 athletes from 37 countries and regions, 27 Sports. 1. China, 2. South Korea, 3. Japan.

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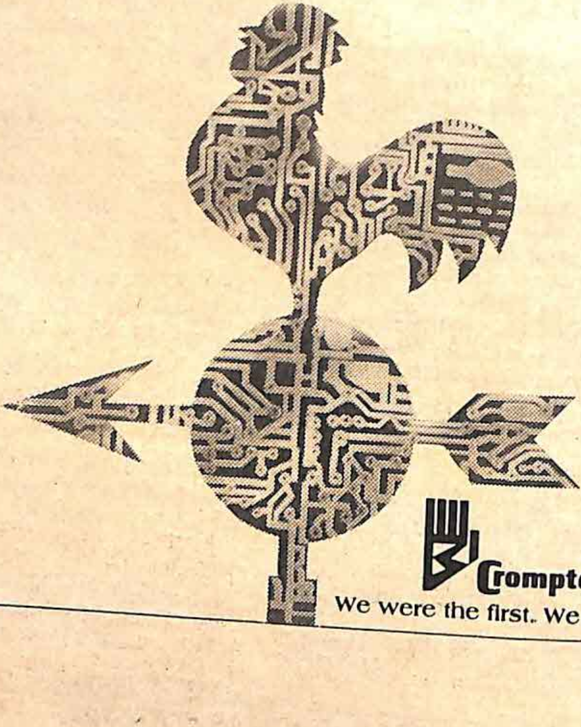

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800 m: 1. Billy Konchellah (Ken) 1:43.00s; 2. Jose Luiz Barbosa (Bra) 1:44.24; 3. Mark Everett (USA) 1:44.67.

1500 m: 1. Noureddin Morcelli (Alg) 3:32.84s (MNR); 2. Wilfred Kirochi (Ken) 3:34.84; 3. Hauke Fuhlbrugge (Ger) 3:35.28.

5000 m: 1. Yobes Ondieki (Ken) 13:14.45s (NMR); 2. Fita Bayesa (Eth) 13:16.64; 3. Brahim Boutayeb (Mor) 13:22.70.

10000 m: 1. Moses Tanui (Ken) 27:38.74s; 2. Richard Chelimo (Ken) 27:39.41; 3. Khalid Skah (Mor) 27:41.74.

Marathon: 1. Hiromi Taniguchi (jap) 2h:14:57s; 2. Ahmed Salah (Djibouti) 2:15:26; 3. Steve Spence (USA) 2:15:36.

110 m hurdles: 1. Greg Foster (USA) 13.06s (NMR); 2. Jack Pierce (USA) 13.06; 3. Tony Jarrett (GBr) 13.25.

400 m hurdles: 1. Samuel Matete (Zam) 47.64s; 2. Winthrop Graham (Jam) 47.74; 3. Kriss Akabusi (GBr) 47.86.

3000 m Steeplechase: 1. Moses Kiptanui (Ken) 8:12.59s; 2. Patrick Sang (Ken) 8:13.44; 3. Azzedine Brahmi (Alg) 8:15.54.

4x100 m: 1. USA 37.50s (WR); 2. France 37.87; 3. Great Britain 38.09.

4x400 m: 1. Great Britain 2:57.53s; 2. USA 2:57.57; 3. Jamaica 3:00.10.

20 Km walk: 1. Maurizio Damilano (Ita) 1h: 19:37 (NMR); 2. Michael Schennikov (USSR) 1:19.46; 3. Yevgeniy Misyula (USSR) 1:20:22.

50 Km walk: 1. Aleksandr Potashov (USSR) 3h:53:09; 2. Andrei Perlov (USSR) 3:53.09; 3. Hartwig Gauder (Ger) 3:55:14.

High Jump: 1. Charles Austin (USA) 2.38m (EMR); 2. Javier Sotomayor (Cub) 2.86; 3. Hollis Conway (USA) 2.36.

Pole Vault: 1. Sergei Bubka (USSR) 5.95m (MNR); 2. Istvan Bagyula (Hun) 5.90; 3. Maksim Tarasov (USSR) 5.85.

Long Jump: 1. Mike Powell (USA) 8.95m (WR); 2. Carl Lewis (USA) 8.91; 3. Larry Myricks (USA) 8.42.

Triple Jump: 1. Kenny Harrison (USA) 17.78m; 2. Leonid Voloshin (USSR) 17.75; 3. Mike Conley (USA) 17.62.

Shot put: 1. Werner Gunthor (Sui) 21.67m; 2. Georg Andersen (Nor) 20.81; 3. Lars Arvid Nilsen (Nor) 20.75.

Discus: 1. Lars Riedel (Ger) 66.20m; 2. Erik De Bruin (Hol) 65.82; 3. Attila Horvath (Hun) 65.32.

Hammer: 1. Yuri Sedykh (USSR) 81.70m; 2. Igor Astapkovich (USSR) 80.94; 3. Heinz Weis (Ger) 80.44.

Javelin: 1. Kimmo Kinnunen (Fin) 90.82m (NMR); 2. Seppo Raty (Fin) 88.12; 3. Vladimir Sasimovich (USSR) 87.08.

Decathlon: 1. Dan O'Brien (USA) 8812 pts (NMR); 2. Michael Smith (Can) 8540; 3. Chritian Schenk (Ger) 8394.

WOMEN

100 m: 1. Katrin Krabbe (Ger) 10.99s. 2. Gwen Torrence (USA) 11.03; 3. Merlene Ottey (jam) 11.06.

200 m: 1. Katrin Krabbe (Ger) 22.09s; 2. Gwen Torrence (USA) 22.16; 3. Merlene Ottey (Jam) 22.21.

400 m: 1. Marie Jose Perec (Fra) 49.13s; 2. Grit Breuer (Ger) 49.42; 3. Sandra Myers (Spa) 49.78.

800 m: 1. Lilia Nurutdinova (USSR) 1:57.50s; 2. Ana Quirot (Cub) 1:57.55; 3. Ella Kovacs (Rom) 1:57.58.

1500 m: 1. Hassiba Boulmerka (Alg) 4:02.21s; 2. Tatyana Dorosvskikh (USSR) 4:02.58; 3. Lyudmila Rogachova (USSR) 4:02.72.

3000 m: 1. Tatyana Dorovskikh (USSR) 8:35.82s; 2. Elena Romanova (USSR) 8:36.06; 3. Susan Sirma (Ken) 8:39.41.

10000 m: 1. Liz McCoglan (GBr) 31:14.31s; 2. Zhong Huangdi (Chn) 31:35.08; 3. Wang Xiuting (Chn) 31:35.99.

Marathon: 1. Wanda Panifil (Pol) 2h:29:53; 2. Sachiko Yamashita (Jap) 2h:29:57; 3. Katrin Dorre (Ger) 2h:30:10.

100 m hrudles: 1. Lyudmila Narozhilenko (USSR) 12.59s; 2. Gali Devers-Roberts (USA) 12.63; 3. Natalya Grigoryeva (USSR) 12.69.

400 m hurdles: 1. Tatyana Ledovskaya (USSR) 53.11s (NMR); 2. Sally Gunnell (GBr) 53.16; 3. Janeene Vickers (USA) 53.47.

4x100 m: 1. Jamaica 41.94s; 2. USSR 42.20; 3. Germany 42.33.

4x400 m: 1. USSR 3:18.43s (MNR); 2. USA 3:20.15; 3. Germany 3:21.25.

10 Km walk: 1. Alina Ivanova (USSR) 42.57 (NMR); 2. Madelein Svensson (Swe) 43.13; 3. Sari Essayah (Fin) 43.13.

High Jump: 1. Heike Henkel (Ger) 2.05m; 2. Yelena Yelesina (USSR) 1.98; 3. Inga babakova (USSR) 1.96.

Long Jump: 1. Jackie Joyner-Kersee (USA) 7.32m; 2. Heike Dreschler (Ger) 7.29; 3. Larissa Berezhnaya (USSR) 7.11.

Shot put: 1. Huang Zhihong (Chn) 20.83m; 2. Natalya Lisovskaya (USSR) 20.29; 3. Svetlana Krivelova (USSR) 20.16.

Discus: 1. Tsvetanka Khristova (Bul) 71.02m; 2. Ilke Vyludda (Ger) 69.12; 3. Larissa Mikhalchenko (USSR) 68.26.

Javelin: 1. Yu Demei (Chn) 68.78 m; 2. Petra Meier (Ger) 68.68; 3. Silke Renk (Ger) 66.80.

Heptathlon: 1. Sabine Braun (Ger) 6672 pts; 2. Liliana Nastase (Rom) 6493; 3. Irina Byelova (USSR) 6448.

Note: WR stands for world record, NMR for New meet record and EMR for Equalled meet record.

MAFATLAL
SUITINGS
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Final Medal Tally

Country	G	S	B	T
United States	10	8	8	26
Soviet Union	9	9	10	28
Germany	5	4	8	17
Kenya	4	3	1	8
Britain	2	2	3	7
China	2	1	1	4
Algeria	2	0	1	3
Jamaica	1	1	3	5
Finland	1	1	1	3
(Tie) France	1	1	0	2
Japan	1	1	0	2
(Tie) Italy	1	0	0	1
Poland	1	0	0	1
Zambia	1	0	0	1
Switzerland	1	0	0	1
Bulgaria	1	0	0	1
Cuba	0	2	0	2
Canada	0	1	1	2
Romania	0	1	1	2
Hungary	0	1	1	2
Norway	0	1	1	2
Morocco	0	0	2	2
Sweden	0	1	0	1
Brazil	0	1	0	1
Netherlands	0	1	0	1
Naimbia	0	1	0	1
Djibouti	0	1	0	1
Ethiopia	0	1	0	1
Spain	0	0	1	1

Escorts Masters Athletic Meet: New Delhi, October '91

The Results:

Men: 100m: R. Bhardwaj (10.71); S. Roberts (10.75); R. Ananda Natarajan (10.90).

200m: S. Roberts (21.59); R. Ananda Natarajan (21.88); M.S. Sridharan (21.92).

400m: Arjun Deviah (47.33) (NMR); D.K. Malaviya (47.70); P. Baiju (48.11).

800m: Vijaya Kumaran (1:49.43); Jossey Mathew (1:49.58); Suresh Babu (1:52.00).

1500m: Bahadur Prasad (3:43.90) (NMR); Kulwant Rai (3:47.53).

5,000m: Bahadur Prasad (14:04.65) (NMR); Madan Singh (14:10.52); Leela Ram (14:11.61).

10,000m: Madan Singh (29:59.60 (NMR); Mohammed Qasim (30:17.93); Subash Chander (30:17.97).

110m Hurdles: Benny John (14.39); Ashish Mondal (14.50); R. Ravidhandran (14.80).

400m Hurdels: Bhuwan Singh (51.93); K.G. Sashidharan (54.25); Manas Rout (54.55).

3,000m steeplechase: Pyare Lal (8:40.14); Narinder Singh (8:42.26); Dina Ram (8:47.64).

High Jump: N. Annavi (2.10); Chander Pal (2.05); Mihir Mistry (2.00).

Long Jump: Shyam Kumar (7.87); P.V. Wilson (7.57); Praveen Fernandes (7.47).

Triple Jump: Mohammed Nizamuddin (15.75); S. Murali (15.55); Satnam Singh (15.37.

Pole vault: M.A. Eldo (4.70); Tamilarasan (4.30).

Shotput: S.D. Eashen (17.21); Avatar Singh (17.12); Manjit Singh (16.61).

Discus: Shakti Singh (54.32); Kuldip Singh (51.74); Sarjit Singh (51.62).

Hammer: Rajesh Bhardwaj (60.08); J.S. Waraich (60.02); Om Prakash (56.06).

Javelin: Satbir Singh (67.02); Daljit Singh (63.26); Malkiat Singh (62.00).

20 km walk (trial): C.S. Rathi (1:28:48.0); Sucha Singh (1:28:52.0); Baldev Singh (1:29:49.0).

4x100m relay (trial): Saibol Roy, R. Ananda, Natarajan, Roy P. Joseph and S. Roberts (40.6) (hand timed).

4x400m relay (trial): B. Baiju, P.V. Raju, D.K. Malviya and Arjun Deviah (3:11.35).

Decathlon: T.K. Sebastian (6878); Jaibir Singh (5511); K.B. Poonacha (5510).

Women

100m: Rachita Panda (11.94); K. Saramma (11.96); Junumani Saikia (12.19).

200m: Dhana Lakshmi (24.71); P.V. Leena (25.63); V. Shanitmol (25.99).

400m: Shiny Wilson (53.60); K. Saramma (54.27); Ashwini Nachappa (54.55).

800m: Alphonson Rayen (2:09.54); Jyotirmoy Sikdar (2:09.55); Mona Hussy (2:14.35).

1,500m: Kamlesh Kumari (4:28.92); Madhuri Saxena (4:29.48); Aparna Bhoyar (4:35.00).

3,000m: Molly Chacko (9:19.03) (NMR); Leelamma (9:23.20); Poonam Taneja (9:31.26).

10,000m: Poonam Taneja (34:33.93) (NR); Leelamma (34:40.63); Sunita Godara (35:45.71).

100m hurdles: Vimla Singh (14.35); Reeth Abraham (14.49); Mita Sadhukhan (14.68).

400m hurdles: Shantimol Philips (58.69); H.G. Apsara (1:00.34); Sylvinia Pais (1:01.38).

High Jump: Angela Lincy (1.76) (NMR); P.S. Bindu (1.71); K. Savita Ponnappa (1.68).

Long Jump: Reeth Abraham (6.12); Mujitha Begum (5.95); Varsha Patel (5.59).

Shotput: Mukti Das (14.21); Amandeep Kaur (13.75); R. Baxla (9.36).

Discus: Harpreet Kaur (45.62); Promila Bharali (43.26); Baljit Kaur (43.18).

Javelin: Razia Shaikh (48.66); Pushpa Ekka (46.42); Gurbari Hembran (41.70).

10 km walk (trial): Kabita Garari (49:56.0); Chitra Chowdhury (54:24.0); Polly Nandi (54:14.0).

Heptathlon (trial): K.K. Geetha (5083 pts (NR).

4x100m relay (trial): Junumani Saikia, K. Saramma, E.B. Shyla and Rachita Panda (45.56).

4x400m relay (trial): Aswini Nachappa, Dhanalakshmi, K. Saramma and Shiny Wilson (3:39.29).

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ADVANI-OERLIKON

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WORLD RECORDS IN ATHLETICS

As in August, 1991

Event	Time	Athlete	Venue	Date
		Men		
100m	9.86	Carl Lewis (USA)	Tokyo	25-08-91
200m	19.72	Pietro Mennea (Italy)	Mexico City	17-09-79
400m	43.29	Butch Reynolds (USA)	Zurich	17-08-88
800m	1:41.73	Sebastian Coe (Great Britain)	Florence	10-06-81
1500m	3:29.46	Said Aouita (Morocco)	West Berlin	23-08-85
5000m	12:58.39	Said Aouita (Morocco)	Rome	22-07-87
10000m	27:08.23	Arturo Barrios (Mexico)	West Berlin	18-08-89
Marathon	2:06:50	Belayneh Densimo (Ethiopia)	Rotterdam	17-04-88
110m Hurdles	12.92	Roger Kingdom (USA)	Zurich	16-08-89
400m Hurdles	47.02	Edwin Moses (USA)	Koblenz	31-08-83
3000m Steeple	8:05:35	Peter Koech (Kenya)	Stockholm	3-07-89
High Jump	2.44	Javier Sotomayor (Cuba)	San Juan	29-07-89
Pole Vault	6.10	Sergei Bubka (USSR)	Malmo	5-08-91
Long Jump	8.95	Mike Powel (USA)	Tokyo	30-8-91
Triple Jump	17.97	Willie Banks (USA)	Indianapolis	16-06-85
Shot Put	23.12	Randy Barnes (USA)	Los Angeles	20-05-90
Discus Throw	74.08	Jurgen Schult (E. Germany)	Neubrandenburg	6-06-86
Hammer Throw	86.74	Yuriy Syedikh (USSR)	Stuttgart	30-08-86
Javelin Throw	96.96	Seppo Raty (Finland)	Punkalaidun	2-06-91
Decathlon	8847	Daley Thompson (Great Britain)	Los Angeles	8/9-08-84
20 km walk	1:18:40	Ernesto Canto (Mexico)	Bergen	5-05-84
50 km walk	3:41:39	Raul Gonzales (Mexico)	Bergen	25-05-79
4x100m Relay	37.50	USA	Tokyo	30-08-91
4x400m Relay	2:56.16	USA	Mexico City	20-10-68
	2:56.16	USA	Seoul	1-10-88
		Women		
100m	10.49	Florence Griffith-Joyner (USA)	Indianapolis	16-07-88
200m	21.34	Florence Griffith-Joyner (USA)	Seoul	29-09-88
400m	47.60	Marita Koch (E. Germany)	Canberra	6-10-85
800m	1:53.28	Jarmila Kratochvilova (Czech)	Munich	26-07-83
1500m	3:52.47	Tatyana Kazankina (USSR)	Zurich	13-08-80
3000m	8:22.62	Tatyana Kazankina (USSR)	Leningrad	26-08-84
10000m	30-13-74	Ingrid Kristiansen (Norway)	Oslo	5-07-86
Marathon	2:21:61	Ingrid Kristiansen (Norway)	London	21-04-85
100m Hurdles	12.21	Yordanka Donkova (Bulgaria)	Stara Zagora	20-08-88
400 m Hurdles	52.94	Marina Stepanova (USSR)	Tashkent	17-09-86
High Jump	2.09	Stefka Kostadinova (Bulgaria)	Rome	30-08-87
Long Jump	7.52	Galina Chistyakova (USSR)	Leningrad	11-06-88
Shot Put	22.63	Natalya Lisovskaya (USSR)	Moscow	7-06-87
Discus Throw	76.80	Gabriele Reinsch (E. Germany)	Neubrandenburg	9-07-88
Javelin Throw	80.00	Petra Felke (E. Germany)	Potsdam	9-09-88
Heptathlon	7291	Jackie Joyner-Kersee (USA)	Seoul	23/24-09-88
10 km walk	41:47	Nadezhda Ryashkina (USSR)	Seattle	24-07-90
4x100m Relay	41.37	East Germany	Canberra	6-10-85
4x400m Relay	3:15.17	USSR	Seoul	1-10-88

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INDIAN SHOW

Indian performance in the Track and Field compared to Asian level (Performance after Beijing Asiad)

Event	Asian record	Asian Games	Indian record
100 m	10.18	10.30	10.30
200 m	20.41	20.94	20.70
400 m	44.56	45.81	45.60
800 m	1:45.77	1:49.48	1:45.77
1,500 m	3:38.24	3:43.56	3:43.40
5,000 m	13:22.97	13:50.22	13:46.40
10,000 m	27:35.33	28:47.96	28:48.72
3,000 m SC	8:19.52	8:34.64	8:30.88
110 m hurdles	13.62	13.82	14.00
400 m hurdles	49.20	50.15	51.60
4 x 100 relay	38.90	38.99	40.41
4 x 400 relay	3:02.33	3:05.82	3:08.20
High jump	2.39	2.26	2.16
Pole vault	5.62	5.62	5.10
Long jump	8.23	8.04	8.07
Triple jump	17.51	17.51	16.79
Shot put	19.48	18.89	18.77
Discus throw	61.72	61.18	57.70
Hammer throw	77.04	71.30	65.76
Javelin throw	87.60	77.26	72.08
29 km walk	1:21.39	1:23.16	1:27.60
50 km walk	3:50.26	4:08.33	4:09.37
Decathlon	8009	7799	7306

Event	Asian record	Asian Games	Indian record
100 m	11.18	11.80	11.39
200 m	22.62	23.42	23.27
400 m	51.61	52.13	51.61
800 m	1:58.00	2:01.04	2:03.16
1,500 m	4:09.50	4:23.11	4:19.33
3,000 m	8:50.68	8:57.12	9:14.70
10,000 m	31:27.00	31:50.98	35:27.00
100 m hurdles	12.73	12.73	13.90
400 m hurdles	55.12	56.05	55.42
4 x 100 relay	43.68	44.36	45.22
4 x 100 relay	3:31.55	3:33.56	3:32.49
High jump	1.97	1.94	1.74
Long jump	6.92	6.69	6.28
Shot put	21.76	20.55	14.58
Discus throw	69.62	63.56	48.92
Javelin throw	68.30	66.00	51.88
10 km walk	43:45.00	44:47.00	53:03.30
Heptathlon	6231	6231	5244

BADMINTON

All England Championship, London.
Men: Ardi Wiranata (Indonesia) beat Fukok Kyong 15-12, 15-10.
Women: Susi Susanta (Indonesia) beat Sarventa Kusumavardinini (Indonesia) 0-11, 11-2, 11-6.
World Badminton, Copenhoxen: Men's singles: Zhao Jian Hua (China) beat A. Kusuma (Indonesia) 15-13, 15-4.
Women's singles: Tang Jingong (China) beat Kusuma Vardini (Indonesia) 11-6, 11-1.

BASKETBALL

Federation Cup, Thrissur: Men: Tisco, Jamshedpur beat C.R.P.F., Delhi 87-66.
Women: F.A.C.T. Aluva beat Eastern Railway 58-57.

BILLIARDS

World Billards. August New Delhi. Mike Russel (England) beat Robbie Foldvari (Australia) 1352-957.

BOAT RACE

Nehru Trophy, Alapuzha: 'Champakulam' Chundan won the race for the 3rd consecutive year. 'Cheruthana' finished second and 'Kavalam' chundan third.

BOXING

Nationals, Shimla: 1. Services; 2. Railways; 3. Haryana.
Best Boxer: Jayadev Bist (C.I.S.F.).
World Heavy weight Boxing, Atlantic city, New Nersey: Evander Holiy Field beat a fighting 42 year old George Foreman in a 12 round bout. Foreman was world champion in 1973-'74.

CHESS

World Chess Qualifying Round, Madras.
V. Anand beat Alexei Driev, the Soviet Grandmaster to enter quarterfinal.
World Chess Quarter final, Brussels.
Anand lost to former world champion Karpov.
Duncan Super Grandmasters Chess, Calcutta.
Dibyendu Barua beat Chinese Grand Master Ye Ron Guang to win the tournament. Barua became India's second Grand Master after Anand.
Koyenco Asian Junior Chess, Kozhikode.
Rogelio Barcenila of Philipines retained title-12 points.
National 'A' Chess, Pondicherry: 1. D.V. Prasad (Karnataka-9½ points). 2. Praveen Thipsarg (Maharashtra-8½ points).
National 'A' Chess women, Kozhikode.
Bhagyasree Thipsay, Maharashtra (11.5 points). 2. Kiran Agarwal (Madhyapradesh). 3. N. Sarita (Tamil Nadu).
Asian Women's Chess, Bhopal. 1. Bhagyasree (7.5 points). Thrid Indian to win the title.

C'WEALTH GAMES

Commonwealth games next only to Olympics – meant for the members of the British Commonwealth (now 50 countries) was started in 1930 in Hamilton, Canada. Then its name was British Empire Games. 11 countries took part in six disciplines. Aquatics was the lone event for women.

Fourteenth games was held in Auckland, New Zealand from January 24 to February 3, 1990. Pakistan reentered the games after two decades of absence. Australia with 52 gold won the overall championship.

The fifteenth Commonwealth games will be held in Victoria, Canada in 1994.

Year	Venue	Countries	Disciplines
1930	Hamilton	11	6
1934	London	16	6
1938	Sydney	15	7
1950	Auckland	12	9
1954	Vancouver	24	9
1958	Cardiff	35	9
1962	Perth	35	9
1966	Kingston	34	9
1970	Edinburgh	42	9
1974	Christ Church	39	9
1978	Edmonton	46	10
1982	Brisbane	46	10
1986	Edinburgh	26	10
1990	Auckland	29	10
1994	Victoria	–	–

Medal Tally at Auckland, 1990.

Country	Gold	Silver	Bronze
Australia	52	54	56
England	47	40	42
Canada	35	41	36
New Zealand	17	14	27.
India	13	8	11
Wales	10	3	12
Kenya	6	9	3
Nigeria	5	13	7

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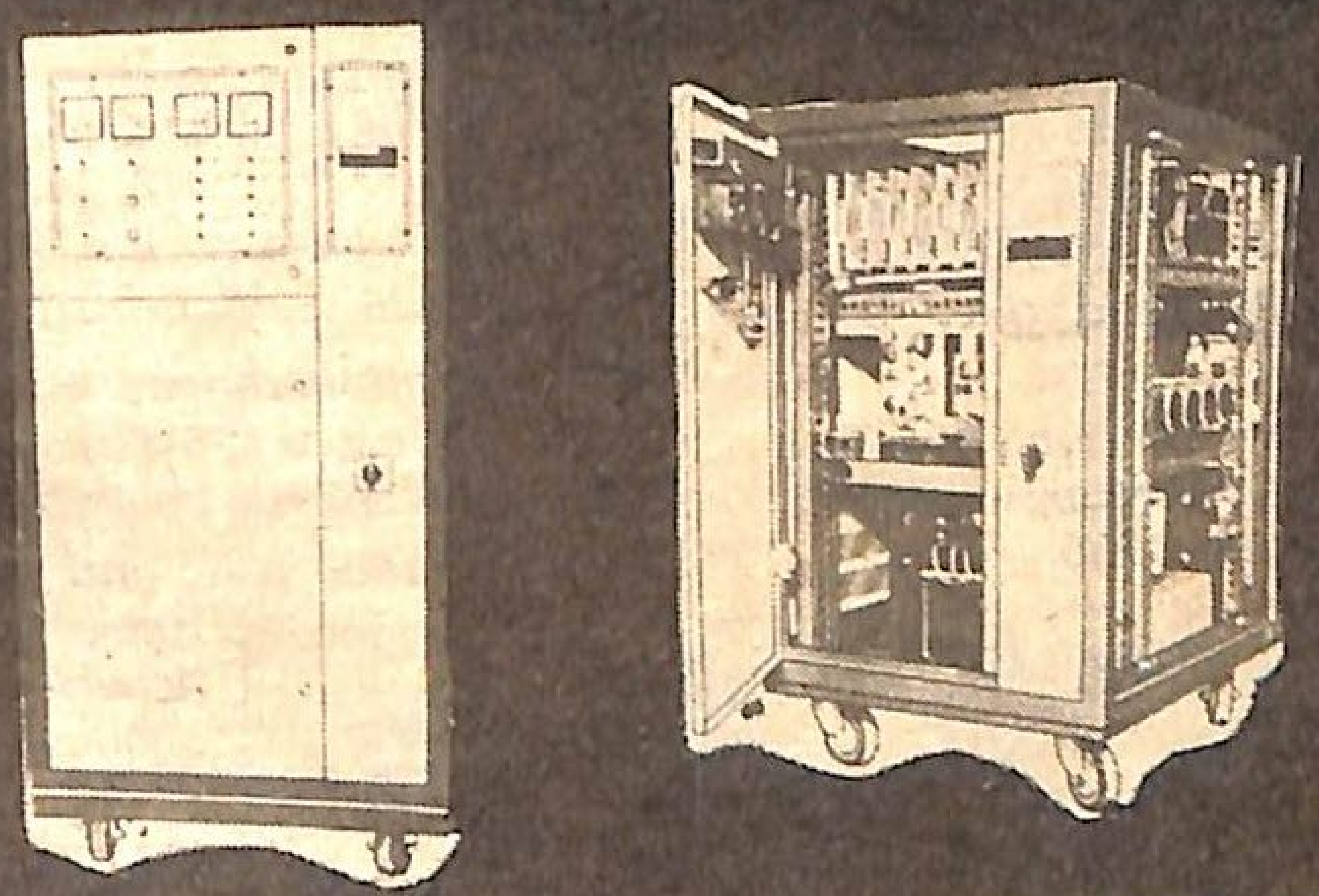

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Kaliki/Nu/206–91

World Records By Indians

Cricket

Largest Crowd: The greatest attendance at a cricket match is about 394,000 for the Test between India & England at Eden Gardens, Calcutta on 1-6 Jan. 1982.

Individual Career Records: (First Class cricket and Tests).

Fastest 200: Scored in 113 min by Ravi Shastri off 123 balls for Bombay vs. Baroda at Bombay on 10th Jan. 1985.

Highest partnership: For any wicket is the fourth-wicket stand of 577 by Gulzar Mohamed, 319 and Vijay Samuel Hazare, 288, for Baroda vs. Holkar at Baroda, on 8-10 March 1947.

Most consecutive maidens: The greatest number of consecutive six-ball maiden overs bowled is 21 (131 balls) by Ramesh Chandra Gangaram 'Bapu' Nadkarni for India vs. England at Madras on 12 Jan. 1964.

Most balls: The most balls bowled in a match is 917 by Cottari Subbanna Nayudu, 6-153 and 5-275, for Holkar vs. Bombay on 4-9 March 1945.

Most expensive bowling: The most runs conceded by a bowler in a match is 428 by Cottari Subbanna Nayudu, for Holkar vs. Bombay on 4-9 March 1945.

Most runs in Tests: 10,122 by Sunil Manohar Gavaskar (av 51.12) in 125 Tests—1971-87.

Most centuries in Tests: 34 by Sunil Gavaskar in 214 innings–1971-87.

Most catches: In a Test match is seven by Greg Chappell for Australia vs. England at Perth on 13-17 Dec. 1974 and by Yajurvindra Singh for India vs. England at Bangalore on 28 Jan.—2 Feb. 1977.

Most Test appearances: Sunil Gavaskar played in a record 125 Tests, 1971-87, including a record 106 consecutive Tests.

Double of 1000 runs and 100 wickets: Kapil Dev Nikhanj achieved it in the shortest time span, 1 yr. 107 days and at the youngest age, 21 yr. 27 days in his 25th test. Ian Botham (England) completed this in the fewest Test matches (21) on 30 Aug. 1979.

Double of 2000 runs and 200 wickets: In fewest matches (42) by Ian Botham and at the youngest age by Kapil Dev at 24 yrs. 68 day.

Double of 3000 runs and 300 wickets: In fewest matches, 71, by Ian Botham and at the youngest age by Kapil Dev at 28 yrs. 1 day.

Youngest Test captain: The Nawab of Pataudi (Jr.) at 21 yrs. 77 days on 23 March 1962 vs. West Indies at Bridgetown, Barbados.

Oldest player in First class cricket: The Governor of Bombay, Raja Maharaj Singh (1878-1959) aged 72 yrs. 192 days, when he batted, scoring 4, on the opening day of the match played on 25-27 Nov. 1950 at Bombay for his XI vs. Commonwealth XI.

Most runs off an over: The first batsman to

→

score 36 runs off a six-ball over was Sir Garfield Sobers (Nottinghamshire) off Malcolm Nash (Glamorgan) at Swansea on 31 Aug. 1968. His feat was emulated by Ravi Shastri for Bombay vs. Baroda at Bombay on 10 Jan. 1985 off the bowling of Tilak Raj.

One Day Internationals: *Most number of wickets: 160 (av. 26.85) by Kapil Dev in 138 matches, 1978-89.*

Minor Cricket Records: *Highest partnership: During a Harris Shield match at Sassanian Ground, Bombay, Vinod Kambli (349 not out) and Sachin Tendulkar (326 not out) put on an unbeaten partnership of 664 runs for the third wicket for Sharadashram Vidyamandir vs. St. Xavier's High School.*

Gavaskar: most tests. Kapil Dev: most wickets

Hockey

Most Olympic medals: *Indians were Olympic champions from the re-introduction of Olympic hockey in 1928 until 1960, when Pakistan beat them 1-0 at Rome. They had their eighth win in 1980.*

Of the seven Indians who have won three Olympic team gold medals, two have also won a silver medal—Leslie Walter Claudius in 1948, 1952, 1956 and 1960 (silver) and Udham Singh in 1952, 1956, 1960 (silver) and 1964.

Men: Highest International score: *When India defeated US 24-1 at Los Angeles, California, US, in the 1932 Olympic games.*

Greatest goalkeeping: *Richard James Allen did not concede a goal during the 1928 Olympic tournament and a total of only three in the following two Olympics of 1932 and 1936.*

Badminton

Most shuttles: *In the final of the Indian National Badminton championships 1986, when Syed Modi beat Vimal Kumar 15-12, 15-12, 182 shuttles were used in the 66-minute period.*

The youngest Gold Medalist: *Ved Prakash won the light-flyweight wrestling title in 1970 aged probably 14, although one report gave his age as 12.*

Chess (origin): *The game originated in ancient India under the name Chaturanga (literally 'four corps', an army game).*

Unicycle Records: *Deepak Lele of Maharashtra, unicycled 3,963 miles (6376 km) from New York City to Los Angeles, June 6—Sept. 25, 1984.*

Long Distance Swimming: *A unique achievement in long distance swimming was established in 1966 by Mihir Sen of Calcutta. He swam the Palk Strait from Sri Lanka to India (in 25 hr. 36 min. on April 5-6); the straits of Gibraltar (Europe to Africa, in 8 hr. 1 min. on Aug. 24); the Dardanelles (Gallipoli, Europe, to Sedulbahir, Asia Minor, in 13 hr. 55 min. on Sept. 12); the Bosphorus (in 4 hr. on Sept. 21) and the entire length of the Panama Canal (in 34 hr. 15 min. on Oct. 29-31). He had earlier swum the English Channel in 14 hr. 45 min. on Sept. 27, 1958.*

(Source: Guinness Book of Records)

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Thunder Down Under

The clash of the Titans once again. The Benson and Hedges World Cup Cricket championship is to be held in Australia and New Zealand begining on February 22, 1992.

The experiment of the Indo-Pakistan joint venture for the Reliance Cup last time, seems to have clicked. This time, the championship will be shared between the Kangaroos and the Kiwis.

With the inclusion of South Africa, there would be 9 countries fighting it out for the world title. The existing Champion and hosts, Australia, is still considered to be the best and the most professional in this limited over competition.

Australia won it in Calcutta, beating England. England under Graham Gooch is another 'percentage performer' who can break the knot at the right time.

Pakistan could probably be the king in the Rack with its battery of Race bowlers and Imran Khan at the helm. India, on the other hand, can boast of the strongest batting time up. And, with Vivian Richards still around, the West Indian can still turn into a torna.... The South Africans, who last played in World Cup in 1970, is putting its pieces together.

Fixures:

***Feb. 22:** England vs India at Perth (day-night), New Zealand vs Australia at Auckland.*

***Feb. 23:** West Indies vs Pakistan at Melbourne, Sri Lanka vs Zimbabwe at New Plymouth, New Zealand.*

***Feb. 25:** New Zealand vs Sri Lanka at Hamilton, New Zealand.*

***Feb. 26:** Australia vs South Africa at Sydney (day-night), Pakistan vs Zimbabwe at Hobart, Australia.*

***Feb. 27:** England vs West Indies at Melbourne (day-night).*

***Feb. 28:** India vs Sri Lanka at Mackay, Australia.*

***Feb. 29:** West Indies vs Zimbabwe at Brisbane, New Zealand vs South Africa at Auckland.*

***March 1:** Australia vs India at Brisbane, England vs Pakistan at Adelaide.*

***March 2:** Sri Lanka vs South Africa at Wellington, New Zealand.*

***March 3:** New Zealand vs Zimbabwe at napier, New Zealand.*

***March 4:** Pakistan vs India at Sydney (day-night).*

***March 5:** Australia vs England at Sydney (day-night), West Indies vs South Africa at Christchurch, New Zealand.*

***March 7:** Australia vs Sri Lanka at Adelaide, India vs Zimbabwe at Hamilton, New Zealand.*

***March 8:** Pakistan vs South Africa at Brisbane, New Zealand vs West Indies at Auckland.*

***March 9:** England vs Sri Lanka at Ballarat, Australia*

***March 10:** Zimbabwe vs South Africa at Canberra, West Indies vs India at Wellington.*

***March 11:** Australia vs Pakistan at Perth (day-night).*

***March 12:** England vs South Africa at Melbourne (day-night), New Zealand vs India at Dunedin, New Zealand.*

***March 13:** West Indies vs Sri Lanka at Berri, Australia.*

***March 14:** Australia vs Zimbabwe at Hobart, Australia.*

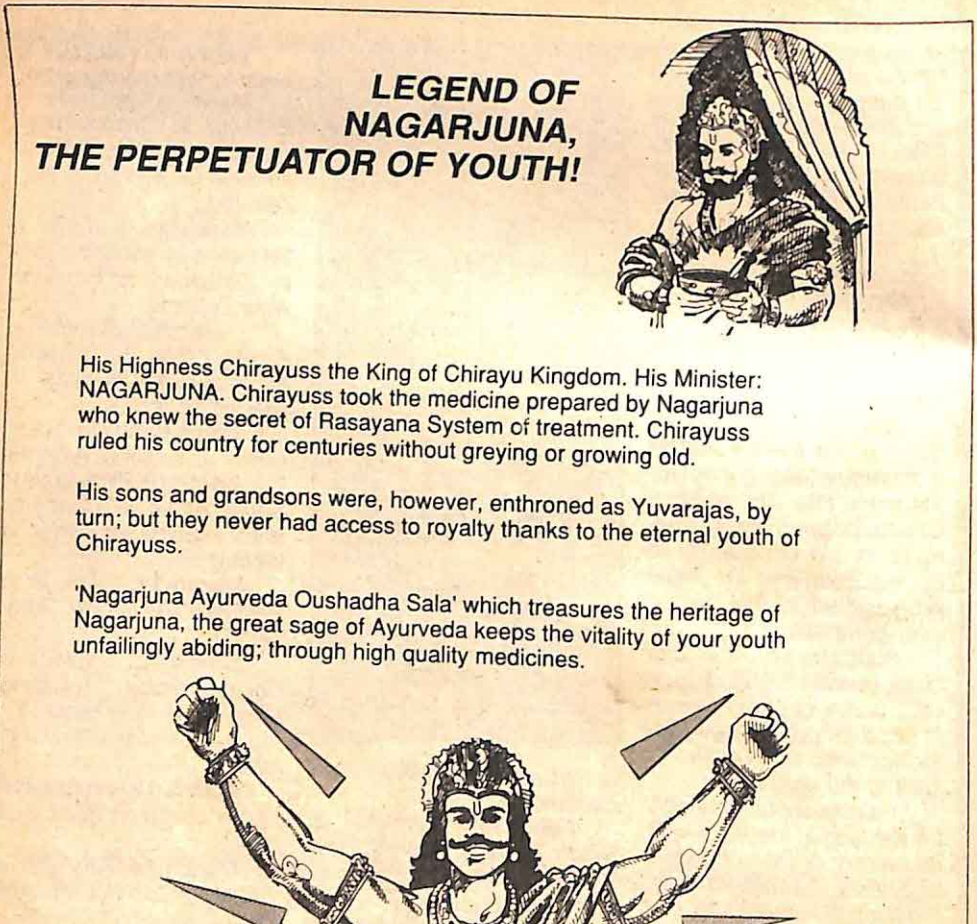
***March 15:** India vs South Africa at Adelaide, Pakistan vs Sri Lanka at Perth, New Zealand vs England at Wellington.*

***March 18:** Australia vs West Indies at Melbourne (day-night), England vs Zimbabwe at Albury, Australia, New Zealand vs Pakistan at Christchurch.*

***March 21:** Semifinal at Auckland.*

***March 22:** Semifinal at Sydney.*

***March 25:** Final at Melbourne.*



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Bermuda	1	0	1
Guernsey	1	0	0
Papua New Guinea	1	0	0
Zimbabwe	0	2	1
Ghana	0	2	0
Tanzania	0	1	2
Zambia	0	0	3
Bahamas	0	0	2
Western Samoa	0	0	2
Guyana	0	0	1
Malta	0	0	1

CRICKET

Wills Trophy: Board Presidents Eleven. B.P. Eleven 234 for 8; W. Eleven: 206 for 8.

Irans Trophy: Ranji Champions, Haryana beat Rest of India. Score: Rest of India 518 for 9 declared; 144. Haryana: 459; 207 for 6. Kapil Dev 4/26 and 135, 53 man of the match.

Asia Cup, Calcutta: Indian beat Sri Lanka in final to retain the cup. Score: Srilanka: 204; India 205 for 3. Kapil 4 wickets for 31, including a hatrick.

Dulep Trophy, Jamshedpur: North Zone beat West Zone on 168 runs first innings lead. Score: North 729 for Nine. 59 for no loss; West: 561.

Ranji Trophy, Bombay: Haryana beat Bombay by three runs. Scores: Haryana 522, 242; Bombay 410, 352. This is Haryana's first Ranji title.

Sharjah Cup, Sharjah: Pakistan beaat India by 72 runs. Score-Pakistan 262 for 5. India 190. Highlight wa Aquib Javed's hatrick (7 for 37).

Reliance World Cup: Jointly held by India and Pakistan and sponsored by the Reliance Industries Ltd. of India, the fourth World Cup Cricket Championship was won by Australia under Allan Border's captaincy. In the final at Eden Gardens, Calcutta, they beat England by seven runs.

In the first semifinal at Lahore, Australia beat Pakistan by 18 runs. England beat defending champion India in the second semifinal at Bombay by 35 runs.

FOOTBALL

Santosh Trophy, Palakkad: Maharashtra beat Kerala:

WELCOME, SOUTH AFRICA

No more black flag demonstrations, no more brickbats. It's welcome to South Africa. The ban is over.

South Africa's return to world sports could well be the most important historical event in 1991. The International Olympic Committee's decision came in July. The I.A.A.F. followed suit. And in Sharjah, the International Cricket Conference decided to admit South Africa into the World Cup fixture.

South Africa was expelled from the Olympic movement in 1969 because of its policy of apartheid. The first olympic appearance of South Africa was by an all white team in 1960 Rome Olympics.

Nelson Mandela's long struggle in prison and his release later forced the South African government to listen to the African National Congress. They came down the ladder.

The I.O.C. decision to read.... S. Africa came after its discussions with the International Olympic Committee of South Africa.

South Africa's official recognition by I.O.C. and I.A.A.F. means that the Zola Buds doesn't have to become another country's citizen to participate in world meets. Also, those who tour South Africa will no more be called rebels.

South African Cricket team's tour to India in November 1991 was epoch making. It was their first official visit abroad, after a gap of 26 years. The team under Clive Rice was visiting a country whose Davis cup tennis team walked out of the challenge round because of their 'Negrophobia'.

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SANTOSH TROPHY

Year	Winners	Runners-up	Venue
1941	Bengal	Delhi	Calcutta
1942-43		Not held	—
1944	Delhi	Bengal	Delhi
1945	Bengal	Bombay	Bombay
1946	Mysore	Bengal	Bangalore
1947	Bengal	Bombay	Calcutta
1948		Not held	—
1949	Bengal	Hyderabad	Calcutta
1950	Bengal	Hyderabad	Calcutta
1951	Bengal	Bombay	Bombay
1952	Mysore	Bengal	Bangalore
1953	Bengal	Mysore	Calcutta
1954	Bombay	Services	Madras
1955	Bengal	Mysore	Ernakulam
1956	Hyderabad	Bombay	Thiruvananthapuram
1957	Hyderabad	Bombay	Hyderabad
1958	Bengal	Services	Madras
1959	Bengal	Bombay	Nowgong
1960	Services	Bengal	Kozhikode
1961	Railways	Maharashtra	Bombay
1962	Bengal	Mysore	Bangalore
1963	Maharashtra	Andhra	Madras
1964	Railways	Bengal	Guwahati
1965	Andhra	Bengal	Kollam
1966	Railways	Services	Hyderabad
1967	Mysore	Bengal	Calcutta
1968	Mysore	Bengal	Bangalore
1969	Bengal	Services	Nowgong
1970	Punjab	Mysore	Madras
1971	Bengal	Railways	Madras
1972	Bengal	Tamil Nadu	Panaji
1973	Kerala	Railways	Kochi
1974	Punjab	Bengal	Jullundur
1975	Bengal	Karnataka	Kozhikode
1976	Bengal	Maharashtra	Patna
1977	Bengal	Punjab	Calcutta
1978	Bengal	Goa	Srinagar
1979	Bengal	Punjab	Coimbatore
1980	Punjab	Railways	Cuttack
1981-82	Bengal	Railways	Thrisoor
1983	Bengal	Goa	Calcutta
1984	Goa	Punjab	Madras
1985	Punjab	Maharashtra	Kanpur
1986	Punjab	Bengal	Jabalpur
1987	Bengal	Railways	Calcutta
1988	Punjab	Kerala	Kollam
1989	Bengal	Kerala	Guwahati
1990	Goa	Kerala	Margao
1991	Maharashtra	Kerala	Palakkad

Nehru Cup International, Thiruvananthapuram: Romania beat Hungary 3-1 in final.

Federation Cup, Kannur: Kerala police beat Mahindras, Bombay 2-0.

Dr. B.C. Roy Junior National Football, Sambalpur (August): Bengal beat Goa 2-1.

Nizam Gold Cup, Hyderabad: J.C.T. Phagwara beat Tata Football Academy 1-0.

Nagji Trophy, Kozhikode: Muhammedans Calcutta beat Indian Eleven 2-1.

European Cup Winners Cup, Rotterdam: Manchester United beat Barcelona 2-1.

F.A. Cup, London: Tottenham beat Nottingham Forest 2-1.

UEFA Cup: Intermilan beat Roma 2-1.

European Cup, Barni: Red Star Belgrade beat Olympic Marsielle in tie breaker 5-3.

World Youth Cup, Lisbon: Portugal beat Brazil 4-2 in tie breaker.

American Cup, Santágo: 1. Argentina, 2. Brazil, 3. Chile.

Asian Club Football, Dhaka: Esthegrel Iran beat Leoning China 2-1.

Pre Olympic Football Asian Group B Hyderbad: 1. Kuwait, 2. Syria, 3. Oman, 4. Lebanon, 5. India.

World Cup: Rome, July 1991: West Germany beat Argentina 1-0 for its third consecutive world title.

World Cup History			**Score**
1930	Uruguay	Argentina	4-2
1934	Italy	Czechoslovakia	2-1
1938	Italy	Hungary	4-2
1942	No matches		
1946	No matches		
1950	Uruguay	Brazil	2-1
1954	W. Germany	Hungary	3-2
1958	Brazil	Sweden	5-2
1962	Brazil	Czechoslovakia	3-1
1966	England	W. Germany	4-2
1970	Brazil	Italy	4-1
1974	W. Germany	Poland	4-1
1978	Argentina	Holland	3-1
1982	Italy	W. Germany	3-1
1986	Argentina	W. Germany	3-2
1990	W. Germany	Argentina	1-0
1994	World Cup is to be held in the U.S.		

No Light No Play

Italy's popular soccer outfit, A.C. Milan, was banned from European Cup for one year following an incident in the quarter-final against Marseille. Marseille was also fined Sw. Fr. 25,000 (Rs. 3.34,000) for inadequate organisation during the match at the team's velod-rome. Milan, the European Cup champion for the last two seasons, walked off the pitch when floodlights failed and refused to return when the referee tried to restart the second leg tie. Milan's delegate, Adriano Galliani, was also suspended from all official duties in connection with the UEFA till July 31, 1993. Marseille was leading 1-0 from a goal by England international, Chris Waddle, giving the team a 2-1 aggregate in the two-leg tie.

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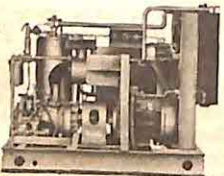

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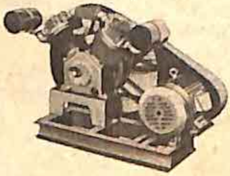

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GYMNASTICS

National Gymnastics, Delhi, March. Team: 1. Men: Railways (485.90 points); 2. Chandigarh (482.65); 3. Punjab (480.50);
Women: 1. Railways (282.55); 2. Haryana (262.65); 3. West Bengal (261.70).
Overall Best Individual: Men: 1. Rajest Kumar (Chandigarh), 2. Ratan Deb Nath (Railways), 3. Vikas Sabarwal (Punjab).
Women: Sipra Jana (Railways), 2. Anju Dua (Haryana), Kripati Patel (Gujarat).

HOCKEY

Sultan Azlan Shah Hockey Tournament, Ipoh, Malaysia, August:

India won the six nation tournament, winning all the five matches.

Final Position

	Matches	Won	Drawn	Lost	Points
India	5	5	0	0	10
Pakistan	5	4	0	1	8
Soviet Union	5	1	2	2	4
New Zealand	5	1	1	3	3
Malaysia	5	1	1	3	3
South Korea	5	0	2	3	2

Indira Gandhi International Hokey, New Delhi: Soviet Union won the 7 nation tourney. Holland finished second, and India third.

Champions Cup: Berlin: Men 1. Germany, 2. Pakistan, 3. Holland. Women: 1. Australia, 2. Germany, 3. Holland.

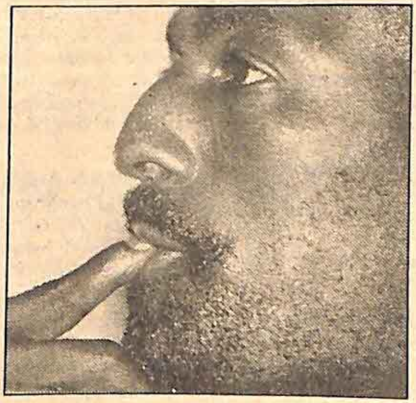
Junior Women's National, Thiruvananthapuram: Punjab beat Chandigar 2-1 in Final.

National Women's Hockey, Gorgaon: Railways beat Air India 2-1.

Olympic Qualifying, Auckland: India lost to Soviet Union 0-3.

World Cup: Lahore, February, 1990. Holland beat Pakistan 3-1. Australia beat West Germany 2-1 for the third position.

World Cup (women's): Sydney, May, 1990. Holland beat Australia 3-1.



The Lion Returns to Den

The most spectacular batsman of modern cricket, Issac Vivian Alexander Richards retired from test cricket. The oval in England was privileged to witness the great man's last test innings. It was the last test of the series against England. Richards scored 50. In the penultimate test at Edgbaston, he had hit a match winning 73.

Idolised all over the cricketing world, Richards had been compared with all time greats like Gary Sobers and Don Bradman. His audacious non conformism and arrogant style has lent Richards an aura of a super macho hero. That whipping shot of deliveries from off-stump through on side would be a never-fading picture in the minds of cricket fans.

Richards may be around for the world cup in Australia-Newzealand in 1992. But that famous swagger would be missed in test cricket grounds.

Richards made his debut in India in 1974-'75, in Bangalore. He hit 192 not out in that series. His highest test score is 291 against England in 1976. Richards played 121 tests, scored 8539 runs at an average of 50.22, took 32 test wickets (average 61.43) Best Bowling figure is 2 for 17 against Pakistan in 1987-'88.

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OLYMPIC PREVIEW

BARCELONA, THE CARAVAN IS HERE

The Olympic caravan has finally reached the Mediterranean shore. Four years ago, when it left the shores of South Korea, Barcelona was only shaking off her slumber. It's 1992, and Barcelona is ready. The Games begin on July 25.

A lot has happened in this European city ever since it was chosen as the venue for the festival of the five rings. The city has practically seized on the 1992 event to push its development into the next century.

It has been hard work and definitely costly. A couple of billion pounds have already been spent to get the city ready to get deluged by a vast, cosmopolitan tide of humanity-crowding its hotels, restaurants and every possible space, to bensting point.

This Mediterranean metropolis, with population of about three million and a remarkable site close to the sea and surrounded by mountains is now counting the final minutes for the D'day.

Many of the Olympic events will take place in existing sports buildings: for example, the FC Barcelona football stadium. The major track and indoor athletics, however, will be based on the Montjuic Hill, which looms across the city from the west. The Italian modernist Vittorio Gregotti has reconstructed the existing 1929 stadium here to accommodate 50,000 spectators.

Close by is the best of the Olympics structures, the indoor stadium named the Palau Sant Jordi (after Catalonia's patron saint, St. George) designed by the Japanese master Arata Isozaki. With its curved, organic form hugging the hilltop, the building is roofed in zinc sheets and ceramic tiles and faced partly in brick and marble. The interior, however, is simply a staggering modern space, using advanced structural ideas to create one of the most impressive contemporary interiors in all Europe.

Alongside, the so-called Sports University by

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A view of Barcelona City with the Montjuvic Stadium, the main venue of the 25th Olympiad.

the controversial Catalan classicist Ricardo Bofill seems both trivial and arbitrary. The building is faceed in an unappealing artificial stone with details which succeed in being both "incorrect" in strict classical terms (in the manner of Robert Venturi) and rather gross.

It seems hard to believe that the city's new airport terminal (built to cater for the Games) is also a product of Bofill's Taller de Arquitectura. Its sheer double-glazed facades seem to indicate that Bofill is finally turning away from a style which many in Spain still associate with the hated Generalissimo. (Bofill, not surprisingly, has, built rather more in France than in his native land).

Barcelona's architecture boom has brought in designers from far and wide. The Italian Gae Aulenti (best known for her fit-out of the Musee d'Orsay in Paris) is completing a total rehabilitation of the National Gallery of Catalonia, housed in a vast, Escorial-like building on the Montjuic. The American Richard Meien is responsible for the Contemporary Art Museum in the old town, Spaniard Rafael Moneo for the Music Auditorium in the Plaza de las Glorias. Sir Norman Foster's 800 ft-high telecommunications tower is nearing completion on a ridge to the west of the city.

All this is impressive-a series of architectural monuments (funded mostly from the public purse) for a historic event. But even more impressive is the way in which the monuments are matched by smaller projects of real quality-like the new public library in the Hostafrancs district by the practice of Gali, Quintana and Solanas, or the new parks created throughout the city. The refurbishment of the former Montaner & Simon publishing office as headquarters for the Tapies Foundation sets new standards for the marriage of restoration and convicing new design.

Not everyone sees the Olympics as a boon to the city. There have been allegations that the Games have been used as the spearhead of a process of gentrification, with new development pushing out cheap rented housing. But , to its credit, Barcelona sees 1992 not as a one-off event but part of a shrewd and well-informed process of cultural and economic aggrandisement.

However, architectural renovation is only a part of the Olympic drama. It is for the city only. The real showpiece would be all those actions happending inside these architectural wonders; the games in all its fun and funny.

Out of the 257 events in 25 disciplines, the glamour event would naturally be athletics. The Tokyo world meet has set the stage for much more exciting competition. An Olympic gold is something very special. So, the Carl Lewises and Mike Powells get set for an entirely different grade of game.

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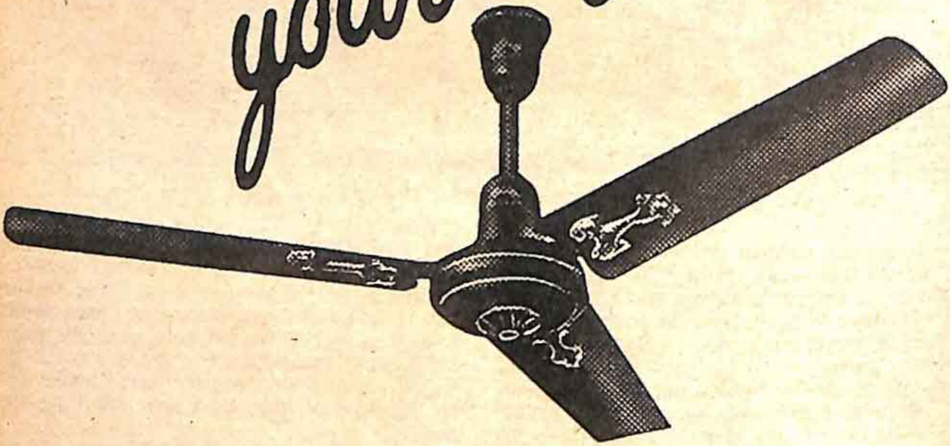

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The star attraction would be Carl Lewis and Mike Powell. Lewis will have to fight it out with his team sprintmates like Leroy Burell and Denis Mitchel. Burell had a consistently good record against Lewis. Powel's long jump record might be safe, but for the coveted Olympic gold, holder Lewis is no push over.

In the women's section, Katrain Krabbe of Germany must be expecting a much stiffer challenge for Merelene Ottey of Jamaica. The sprint events for both men and women could as well be the most memorable moments in Barcelona.

Barcelona also would be history in the sense that the Mediterranean city has the opportunity to host the South Africans returning to Olympics after three decades. A unified Germany would be an added attraction.

The Olympics has its origins on the banks of the Mediterranean. This time, it is returning, not actually to its birthplace, but as near to home as possible. With South Africa and Cuba participating, Barcelona can also boast of bringing everyone together again.

257 events: A total number of 257 events including 159 for men, 86 for women and 12 for mixed, in 25 disciplines, will be held in the Barcelona Games.

Athletics, glamour event of this sports extravaganza, has the maximum of 43 events in which competitions will be held while baseball and football are the two sports in which only one medal is at stake.

Four other team sports, basketball, handball, volleyball and hockey will have two events, one each for men and women while modern pentathlon with two events is only for men.

The disciplines in which there will be mixed events are: equestrian (six), shooting (two) and yachting (four).

There will be 43 events in athletics (24 for men and 19 for women), 14 in rowing (eight men and six women), four in badminton (two men and two women), 12 in boxing, 16 in canoeing (12 men and 4 women), 10 in cycling (seven men and three women), six in equestrian (all mixed), eight in fencing (six men and two women), 15 in gymnastics (eight men and seven women), 14 in judo (seven each), 20 in wrestling, 38 in aquatics (19 each), tennis (four each), and table tennis (two each), 13 in shooting (7 men, four women and two mixed), four in archery (two each), 10 in weightlifting and 10 in yachting (three men, three women and four mixed).

Following is the detailed list of events:

Athletics-43 events: men: 24 (100 m, 200 m, 400 m, 800 m, 1500 m, 5000 m, 10,000 m, 110 m hurdles, 400 m hurdles, 3000 m steeplechase, 20 km walk,, 50 km walk, 4 x 100 m relay, 4 x 400 m relay, marathon, high jump, long jump, triple jump, pole vault, shotput, discus, javelin, hammer, decathlon).

Women: 19 (100 m, 200 m, 400 m, 800 m, 1500 m, 3000 m, 10,000 m, 10 km walk, 100 m hurdles, 400 m hurdles, 4 x 100 m relay, 4 x 400 m relay, marathon, highjump, longjump, shotput, discus, javelin, heptathlon).

Rowing-14: Men-8 (four oars with coxswain, double sculls without coxswain, pair oars without coxswain, single sculls, pair oars with coxswain, four oars without coxswain, quadruple sculls without coxswain, eight oars with coxswain).

Women-6 (coxles four, double sculls without coxswain, pair oars without coxswain, single sculls, quadruple sculls without coxswain, eight oars with coxswain).

Badminton-four: Men-2 (singles and doubles), Women-2 (singles and doubles).

Baseball-1 (men's tournament for eight teams). Basketball-2: Men's tournament for 12 teams and women's for eight teams.

Boxing-12 events: (Light fly, fly, bantam, feather, light, light welter, welter, light middle, middle, light heavy, heavy, super heavy).

Canoeing-16: Men 12 (kayaking- k1 500 m, k1 1000 m, k2 500 m, k2 1000 m, k4 1000 m, c1 500 m, c1 1000 m, c2 500 m, c2 1000 m, slalom-k1, c1, c2).

Women-4 (k1 500 m, k2 500 m, k4 500 m, slalom-k1).

Cycling-10: Men-7 (track-1000 m time trial, individual sprint, 4000 m individual sprint (3 laps), 4000 m team pursuit, individual points race road-100 km team time trial, individual road race (190 km).

Women-3 (individual road race (70 kms), individual sprint track race (3 laps), 3000 m individual pursuit).

Equestrian-six mixed events (team jumping, individual jumping, team dressage, individual dressage, three day events, team and individual).

Fencing-8 Men-6 (foil individual and team sabre individual and teams epee individual and teams), Women-2 (foil individual and teams).

Football- men's tournament for 16 teams.

Gymnastics-15: Men-8 (team event, individual all-round, floor exercises, pommel horse, rings, horse vault, paralle bars, horizontal bars), Women-7 (team, individual all-round, horse vault, uneven bars, balance beam, floor exercises, rythmic-individual allround).

Handball-2: Men's tournament for 12 teams and women's tournament for eight teams.

Hockey-2: (men's for 12 teams and women's for eight).

Judo-14: Men-7 (upto 60 kg, 60 kg to 65 kg, 65 kg to 71 kg, 71 kg to 78 kg, 78 kg to 86 kg, 86 kg to 95 kg, over 95 kg).

Women-7 (upto 48 kg, 48 kg to 52 kg, 52 kg to 56 kg, 56 kg to 61 kg, 61 kg to 66 kg, 66 kg to 72 kg, over 72 kg).

Wrestling-20: (ten each in freestyle and Grecoroman-upto 48 kg, up to 52 kg, up to 57 kg, up to 68 kg, up to 74 kg, up to 82 kg, up to 90 kg, up to 100 kg, over 1000 kg).

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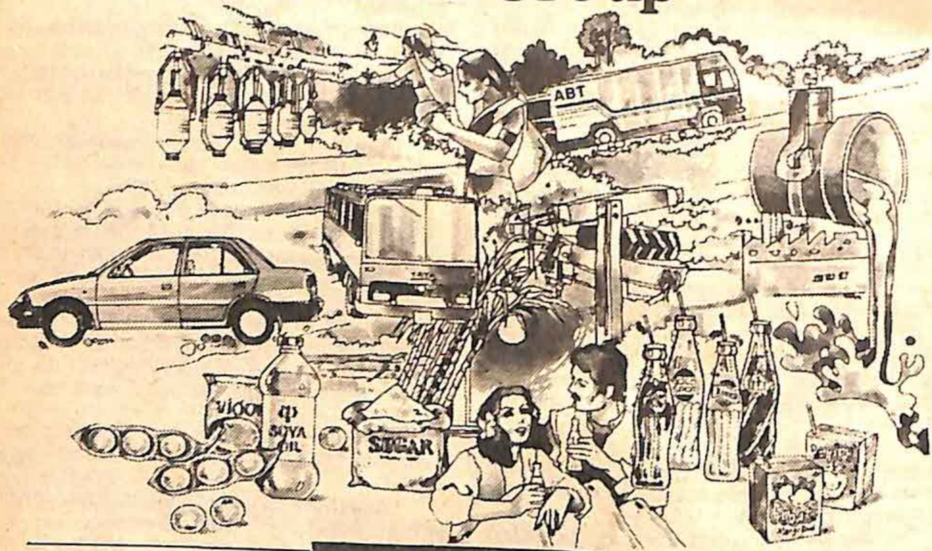

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men consisting of equestrian, fencing, swimming, shooting, cross-country running).

Swimming-38: Men- 16 (freestyle in 50 m, 100 m, 200 m, 400 m, 1500 m, backstroke in 100 m, 200 m, breaststroke in 100 m, 200 m, butterfly in 100 m, 200 m, medley in 200 m, 400 m, 4 x 100 m and 4 x 200 m, freestyle relay, 4 x 100 m medley relay).

Women- 15 (freestyle in 50 m, 100 m, 200 m, 400 m, backstroke in 100 m, 200 m, breaststroke in 100 m, 200 m, butterfly in 100 m, 200 m, medley in 200 m, 400 m, 4 x 100 m, freestyle relay and 4 x 100 m medley relay).

Synchronised swimming for women- 2 (duet and solo).

Diving - Men-2: (spring board-3 m, platform-10 m), diving women-2 (spring board-3 m, platform-10 m).

Waterpolo-1: (men's tournament for 12 teams).

Tennis-4: Men-2 (singles and doubles), Women-2 (singles and doubles).

Table Tennis-4: Men -2 (singles and doubles). Women-2 (singles and doubles).

Shooting-13: Men-7 (rapid fire pistol 25 m, free pistol 50 m, air pistol 10 m, 10 m running target, small-bore rifle three position 50 m, smallbore rifle prone position 50 m, air rifle 10 m).

Women-4 (air rifle 10 m, smallbore rifle three positions 50 m, pistol match 25 m, air pistol 10 m). Mixed-2 (trap 200 targets, sheet 200 targets).

Archery-4: Men's-2 (fita round-90-70-50-30 m and team). Women's-2 (fita round and team.event).

Volleyball-2: Men's tournament for 12 teams and women's for eight.

Weightlifting-10 (up to 52 kg, 56 kg, 60 kg, 67 kg, 75 kg, 82.5 kg, 90 kg, 100 kg, 110 kg, over 110 kg).

Yachting-10: Men-3 (479 class finn class boardsailing). Women-3 (470 class singlehanded dinghy (Europe class) boardsailing). Mixed-4 (soling class star class flying Dutchman class tornado class).

Demonstration sport at Barcelona-rink hockey, pelota vasca and taek-wondo. ■

SCHEDULE FOR 1992 SUMMER OLYMPIC GAMES

	July							August								
	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9
Archery							★	★	★	★	★					
Athletics							★	★	★	★		★	★	★	★	
Badminton				★	★	★	★	★	★	★	★					
Baseball		★	★	★	★		★	★	★		★	★	★			
Basketball		★	★	★	★	★	★	★	★	★	★	★	★	★		
Boxing		★	★	★	★	★	★	★	★	★	★	★	★		★	★
Canoeing							★	★	★			★	★	★	★	
Cycling	★	★	★	★	★	★	★		★							
Equestrian Sports			★	★	★	★		★	★	★	★	★		★		★
Fencing				★	★	★	★	★		★	★	★	★	★		
Football	★	★	★	★	★	★		★	★			★		★	★	
Gymnastics		★	★	★	★	★	★	★	★					★	★	★
Handball			★		★	★	★	★	★	★	★	★		★	★	
Hockey		★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Judo								★	★	★	★	★	★	★		
Modern Pentathlon		★	★	★	★											
Rowing			★	★	★	★	★	★	★							
Shooting		★	★	★	★	★	★	★	★							
Swimming/diving/polo		★	★	★	★	★	★	★	★	★		★	★	★	★	★
Table tennis		★	★	★	★	★		★	★	★	★					
Tennis			★	★	★	★	★	★	★	★	★	★	★	★		
Volleyball		★		★	★	★	★	★	★	★	★	★	★	★		★
Weightlifting		★	★	★	★	★		★	★	★	★	★				
Wrestling		★	★	★	★	★			★	★	★	★	★			
Yachting		★	★	★	★	★	★	★	★	★	★	★				

Note 1: *The swimming dates include synchronised swimming.*

Note 2: *Three non-competition sports (pilota, roller hockey and taekwondo) take place simultaneously.*

Story of Modern Olympics

The modern Olympic movement is one of the few truly heroic ventures of our times. It not only enjoys the participation and support of many famous names in many fields, but also helps create new heroes by providing the motivation to strive for excellence and the opportunity to demonstrate that one has achieved it. It appeals to everyone, penetrating national, racial and ideological barriers and involving as many countries as the United Nations.

This movement is heir to one of the world's oldest and longest lasting traditions, for the ancient Olympics began before the golden age of Greece and continued for more than a millennium without interruption. The various legends about the origin of the games cannot be substantiated; but it is certain that they were held at Olympia, near the north-western coast of the Peloponnesus, about 'eight centuries before Christ. At the early stage the games were run jointly by Elis and Sparta, but eventually the Eleans virtually took complete control.

They conducted the games with stern fairness, and under them the Olympics gained greatly in importance. Competing just for the glory of achievement, winners came to be respected throughout the Western world. Even noblemen and royalty sought honours at Olympia, running side by side with commoners, all hoping to be awarded the coveted olive wreath. The games reached their pinnacle during the fourth and fifth centuries B.C. by which time the simple competitions and rites had evolved into a seven-day celebration of great athletic and cultural accomplishments.

The facilities of ancient Olympia were more modest than those of today.

At first there was only one event in the games: a footrace of less than 200 metres. Gradually more and more events were added until, by the 77th Olympiad, the games took five days with an additional two for religious rites.

By the fourth century of our era, the influence of politicians and the self-seeking wealthy brought corruption to the games and they were abolished by Theodosius 1, Emperor of Rome, in A.D. 394.

But the virtues and worthy ideals of the Olympics were not to be lost to us for ever. When Pierre de Coubertin, in the latter part of the nineteenth century, sought a means to produce men who were more energetic, upright, and disciplined through pedagogy, he decided that sports were a force that could revitalize liberal education. This led him to the realization that a new understanding of amateurism was needed for the youth of different nations to compete equally in sporting events, and ultimately,

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Olympic Games Venues & Dates

No.	Year	Venue	Dates
1.	1896	Athens	April 6-15
2.	1900	Paris	May 20-Oct. 28
3.	1904	St. Louis	July 1–Nov. 23
†.	1906	Athens	April 22–May 2
4.	1908	London	April 27–Oct. 31
5.	1912	Stockholm	May 5-July 22
6.	1916	Berlin	Not held owing to war
7.	1920	Antwerp	April 20–Sept. 12
8.	1924	Paris	May 4–July 27
9.	1928	Amsterdam	May 17–Aug. 12
10.	1932	Los Angeles	July 30–Aug. 14
11.	1936	Berlin	August 1-16
12.	1940	Tokyo, then Helsinki	Not held owing to war
13.	1944	London	Not held owing to war
14.	1948	London	July 29–Aug. 14
15.	1952	Helsinki	July 19–Aug. 3
16.	1956	Stockholm## Melbourne	June 10-17 Nov. 22–Dec. 8
17.	1960	Rome	Aug. 25–Sep. 11
18.	1964	Tokyo	Oct. 10-24
19.	1968	Mexico City	Oct. 12-27
20.	1972	Munich	Aug. 26–Sep. 10
21.	1976	Montreal	July 17–Aug. 1
22.	1980	Moscow	July 19–Aug. 3
23.	1984	Los Angels	July 28–Aug. 12
24.	1988	Seoul	Sep. 17–Oct. 2
25.	1992	Barcelona	Beginning on July 25
26.	1996	Atlanta	USA

† 1906 Games held to mark the 10th Anniversary of the modern games but not numbered since it was not held in the four year sequence.

Only the Equestrian events were held here.

to the idea of reinstituting the Olympic games.

These modern games were to be true successors of the ancient Olympics, founded on high ideals and morals. To Coubertin we owe the recreation of the Olympic philosophy that the practice of amateur sports can balance spiritual values and physical faculties and play an important part in the development of both the individual and human kind in general.

The historic Congress of Paris, held at the Sorbonne in 1894, was attended by 79 delegates representing 49 organizations in France, England, the United States, Greece, Russia, Sweden, Belgium, Italy and Spain, Hungary, Germany, Bohemia, Holland and Australia sent proxies or letters. The Congress was swept by the idea of re-establishing the Olympic Committee. In spite of all the initial difficulties, the first modern Olympic games were held in Athens in 1896, a landmark in modern history.

SEOUL OLYMPICS

The 24th Olympic Games were held during September-October 1988 in Seoul, South Korea. The brilliant performances of G.D.R's Kristine Otto in swimming and U.S.A's Florence Griffith-Joyner in the tracks and the dethroning of Ben Johnson as the fastest man on earth after a dope test were the highlights. India did not win a single medal not even in hockey.

Medal Tally

Country	Gold	Silver	Bronze
USSR	55	31	46
G.D.R.	37	35	30
USA	36	31	27
S. Korea	12	10	11
F.R.G.	11	14	15
Hungary	11	6	6
Bulgaria	10	12	13
Romania	7	11	6
France	6	4	6
Italy	6	4	4
China	5	11	12
Britain	5	10	9
Kenya	5	2	2
Japan	4	3	7
Australia	3	6	5
Yugoslavia	3	4	5
Czechoslovakia	3	3	2
New Zealand	3	2	8
Canada	3	2	5
Poland	2	5	9
Norway	2	3	0
Holland	2	2	5
Denmark	2	1	1
Brazil	1	2	3
Finland	1	1	2
Spain	1	1	2
Turkey	1	1	0
Morocco	1	0	2
Austria	1	0	0
Portugal	1	0	0
Surinam	1	0	0
Sweden	0	4	7
Switzerland	0	2	2
Jamaica	0	2	0
Argentina	0	1	1
Chile	0	1	0

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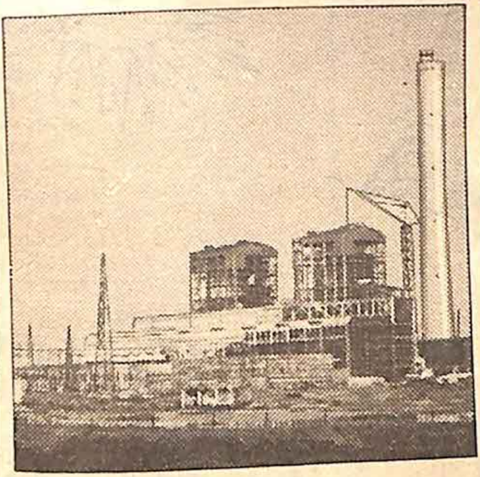

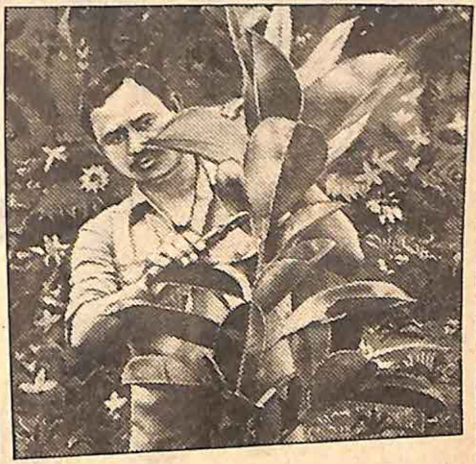

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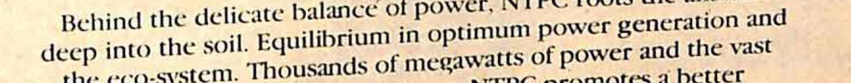

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Antilles	0	1	0
Peru	0	1	0
Senegal	0	1	0
Virgin Islands	0	1	0
Belgium	0	0	2
Mexico	0	0	2
Columbia	0	0	1
Greece	0	0	1
Dijibouti	0	0	1
Mongolia	0	0	1
Pakistan	0	0	1
Philippines	0	0	1
Thailand	0	0	1

Seoul: Athletics Results

Men

100 METRES: 1. C. Lewis (U.S.), 9.92; 2. L. Christie (G.B.), 9.97 (European record); 3. C. Smith (U.S.), 9.99.

200 METRES: J. DeLoach (U.S.), 19.75; 2. C. Lewis (U.S.), 19.79; 3. R. Da Silva (Br.), 20.04.

400 METERS: 1. S. Lewis (U.S.), 43.87 sec; 2. H. Reynolds (U.S.), 43.93; D. Everett (U.S.), 44.09.

800 METRES: 1. P. Ereng (Ken.), 1. min. 43.45 sec; 2. J. Cruz (Br.), 1W43.90; 3. S. Aouita (Mor.), 1W44.06.

1,500 METRES: 1. P. Rono (Ken.), 3. min. 35.96 sec; 2. P., Elliott (G.B.), 3W36.15; 3. J. Herold (E.G.); 3W36.21.

5,000 METRES: 1. J. Ngugi (Ken.), 13:15.52; 3. H. Kunze (E.G.), 13:15.73.

10,000 METRES: 1. M. Boutaib (Mor.), 27 min. 21.46 sec; 2. S. Antibo (It.), 27:23.55; 3. K. Kimeli (Ken.), 27:25.16.

MARATHON: 1. G. Bordin (It.), 2. hr. 10 min. 32 sec; 2. D. Wakiihuri (Ken.), 2:10.47; 3. A. Salesh (Djibouti), 2:10.59.

3,000 METRES STEEPLE CHASE: 1. J. Kaiuki (Ken.), 8 min. 05.51 sec; 2. P. Koech 9Ken.), 8:06.79:3, M. Rowland (G.B.), 8:07.96 (British record).

110 METRES HURDLES: 1. R. Kingdom (U.S.), 12:98; 2. C. Jackson (G.B.), 13.28; 3. T. Campbell (U.S.), 13.38.

400 METRES HURDLES: 1. A. Phillips (U.S.), 47.19; 2. E. Dia Ba (Senegal), 47.23; 3. E. Moses (U.S.), 47.56.

HIGH JUMP: 1. G. Avdeyenko (USSR), 2.38; 2. H. Conway (U.S.), 2.36; equal 3. R. Povarnitsyn (USSR) and P. Sjoberg (Swe.) 2.36.

POLE VAULT: 1. S. Bubka (USSR), 5.90 m; 2. R. Gataulline (USSR), 5.85; 3. G. Yegorov (USSR) 5.80.

LONG JUMP: 1. C. Lewis (U.S.), 8.72 m; 2. M. Pwell (U.S.), 8.49; 3. Myricks (U.S.), 8.27.

TRIPLE JUMP: 1. H. Markov (Bul.), 17.61 m; 2. I. Lapchine (USSR), 17.52; 3. A. Kovalenko (USSR), 17.42.

SHOT PUT: 1. U. Timmermann (E.G.), 22.47 m; 2. R. Barnes (U.S.), 22.39; 3. W. Gunthor (Switz.) 21.99.

DISCUS: 1. J. Schult (E.G.), 68.82 m; 2. R. Ubartas (USSR), 67.48; 3. R. Danneberg (W.G.), 67.38.

India in Seoul Olympics

Athletics: *Women's 400 m: Mercy Kuttan – Moved into second round. Last in second round heat; women's 800 m: Shiny Abraham – Sixth in first round heat; women's 400 m hurdles: P.T. Usha – seventh in first round heat; women's 1,600 m relay: Mercy Kuttan, Vandana Rao, Vandana Shanbhag, Shiny Abraham – last in semi-final heat.*

Archery: *Limba Ram 39th, Sanjeeva Singh 40th, Shyamal Meena 72nd.*

Boxing: *Flyweight – Manoj Pingle – lost in third round after winning second: Sahu Birajdar – injury forced him out after winning second round; John Williams – lost second round bout.*

Hockey: *Sixth placing..*

Shooting: *Soma Dutta – 30th in air rifle; 23rd in free pistol.*

Swimming: *200 m butterfly: Khazan Singh – fifth out of seven in the heat.*

Table Tennis: *Men's singles: – Kamlesh Mehta – fourth in his group; Sujay Ghorpade – seventh in his group; Doubles: Kamlesh and Sujay – fourth in the group; Women's: Niyoti Roy – last in her group.*

Tennis: *Men's singles: Vijay Amritraj lost in the first round; Zeeshan Ali lost in the second round; Doubles: Vijay and Anand lost in the second round.*

Weighlifting: *52 kg class – G. Muthuswamy: 11th; R. Chandrasekharan 19th.*

Wrestling: *48 kg class – Rajesh Kumar: ninth; 52 kg class – Kuldeep Singh: ninth; 57 kg class – Vinod Kumar, no placing; 68 kg class – Satyawan, no placing; 74 kg class – Naresh Kumar, no placing; 90 kg class – Subash Verma, no placing; 100 kg class – Kartar Singh, no placing.*

Yachting: *470 class – Farokh Tarapore and Kelly Rao: 17th.*

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HAMMER: 1. S. Litvinov (USSR), 84.80 m; 2. Y. Sedykh (USSR), 83.76; 3. Y. Tamm (USSR), 81.16.

JAVELIN: 1. T. Korjus (Fin.), 84.28 m; 2. J. Zelezny (Cz.), 84.12; 3. S. Raty (Fin.), 83.26.

DECATHLON: 1. C. Schenk (E.G.), 8,488 pts. (100 m 11.25 sec, long jump 7.43 m, shot put 15.48 m, high jump 2.27 m, 400 m 48.90 sec; 110 m hurdles 15.13 sec., discus 49.28 m, pole vault 4.70 m, javelin 61.32 m, 1,500 m 4 min-28.95 sec.); 2. T. Voss (E.G.), 8,399 (10.87, 7.45, 14.97, 1.97, 47.71; 14.46, 44.36, 5.10, 61.76, 4:33.02); 3. D. Steen (Can.), 8,328 (11.18, 7.44, 14.20, 1.97, 48.29; 14.81, 43.66, 5.20, 64.16, 4:23.20).

4x100 METRES RELAY: 1. Soviet Union (V. Bryzgin, V. Krylov, V. Muraviev, V. Savine), 38.19 sec. (European record); 2. Great Britain (E. Bunney, J. Regis, M. McFarlane, L. Christie), 38.28 (Commonwealth record); 3. France (B. Marie-Rose, D. Sangouma, G. Queneherve, M. Moriniere), 38.40.

4x400 METRES RELAY: 1. United States (D. Everett, S. Lewis, K. Robinzine, B. Reynolds), 2. min. 56.16 sec. (equals world record); 2. Jamaica (H. Davis, D. Morris, W. Graham, B. Cameron), 3:00.30; 3. West Germany (N. Dobeleit, E. Itt, J. Vaihinger, R. (Lubke), 3:00.56.

20 KILOMETRES WALK: 1. J. Pribilinec (Cz.), 1 hr. 19 min. 57 sec; 2. R. Weigel (E.G.), 1:19.60; 3. M. Damilano (It.), 1:20:14..

50 KILOMETRES WALK: 1. V. Ivanenko (USSR), 3 hr. 38 min. 29 sec; 2. R. Weigel (E.G.), 3:38:56; 3. H. Gauder (E.g.), 3:39:45.

Women

100 METRES: 1. F. Griffith-Joyner (U.S.), 10.54 sec; 2. E. Ashford (U.S.), 10.83; 3. H. Drechsler (E.G.), 10.85.

200 METRES: 1. F. Griffith-Joyner, 21.34 sec. (world record); 2. G. Jackson, 21.72; 3. H. Drechsler (E.G.), 21.95.

400 METRES: 1. O. Bryzgina (USSR), 48.65 sec; 2. P. Muller (E.G.), 49.45; 3. O. Nazarova (USSR), 39.90.

800 METRES: 1. S. Wodars (E.G.), 1 min. 56.10 sec; 2. C. Wachtel (E.G.), 1:56.64; 3. K. Gallagher (U.S.), 1:56.91.

1,500 METRES: 1. P. Ivan (Rom.), 3 min. 53.96 sec; 2. L. baikauskaite (USSR), 4:00.24; 3. T. Samolenko (USSR), 4:00.30.

3,000 METRES: 1. T. Samolenko (USSR), 8 min. 26.53 sec; 2. P. Ivan (Rom.), 8:27.15; 3. Y. Murray (G.B.), 8:29.02.

10,000 METRES: 1. O. Bondarenko (USSR), 31:05.21 (Olympic record); 2. E. McColgan (G.B.), 31:08.44; 3. Y. Zhupieva (USSR), 31:19.82.

MARATHON: 1. P. Mota (Por.), 2 hr. 25 min. 40 sec; 2. L. Martin (Aus.), 2:25:53; 3. K. Dorre (E.G.), 2:26:21.

100 METRES HURDLES: T.J. Donkova (Bul,), 12.38 sec; 2. G. Siebert (E.G.), 12.61; 3. C. Zackiewicz (W.G.), 12.75.

400 METRES HURDLES: 1. D. Flintoff-King (Aus.), 53.17 sec; 2. T. Ledovskaia (USSR), 53.18; 3. E. Fiedler (E.G.), 53.63.

HIGH JUMP: 1. L. Ritter (U.S.), 2.03 m. (after jump-off); 2. S. Kostadinova (Bul.) 2.01; 3. Bykova (USSR), 1.99.

LONG JUMP: 1. J. Joyner-Kersee (U.S.), 7.40 m; 2. H. Drechsler (E.G.), 7.22; 3. G. Chistyakova (USSR), 7.11.

SHOT PUT: 1. N. Lisovskaya (USSR), 22.24 m; 2.K. Neimke (E.g.), 21.07; 3. Li Meisu (China), 21.06.

DISCUS: 1. M. Hellmann (E.G.), 72.30 m; 2. D. Gansky (E.G.), 71.88; 3. T. Khristova (Bul.), 69.74.

JAVELIN: 1. P. Felke (E.G.), 74.68 m; 2. F. Whitbread (G.B.), 70.32; 3. B. Koch (E.G.), 67.30.

HEPTATHLON: 1. J. Joyner-Kersee (U.s.), 7,291 pts. (world record); 2. S. John (E.g.), 6,897; 3. A. Behmer (E.G.), 8,858.

4x100 METRES RELAY: 1. United States (A. Brown, S. Echols. F. Griffith-Joyner, E. Ashford), 41.98 sec; 2. East Germany (S. Moller. K. Behrendt, 1. Lange, M. Gohr), 42.09; 3. Soviet Union (L. Kondratieva, G. Malchugina, M. Jirova, N. Pomoshchnikova), 42.75.

4x400 METRES RELAY: 1. Soviet Union (T. Ledovskaya, O. Nazarova, M. Pinigina, O. Bryzgina), 3. min. 15.18 sec. (world record); 2. United States (D. Howard, D. Dixon, V. Brisco, F. Griffith-Joyner), 3:15.51; 3. East Germany (D. Neubauer, K. Emmelmann, S. Busch, P. Muller), 3:18.29.

SNOOKER

555 Challenge snooker, New Delhi: Stephen Henry (Scotland) beat world champion John Parrot 9–5.

Eight-year-old's Record

An eight-year old Bombay boy, Dhruv Muni, created ripples in swimming circles by becoming the youghest person to swim the 14 km distance from Uran to Bombay in four hours and 46 minutes on March 7, 1991.

According to the Greater Bombay Amateur Aquatic Association, Muni broke the age record standing since 1976. A 10-year-old boy, whose name has not been mentioned, was the previous record holder.

The feat is even more creditable when seen in the light of the fact that Muni had learnt to swim just eight months ago at the P.M. Bath and Boat Club (Chowpatty) under the guidance of well-known Maharashtra coach, Mr. Kishen Singh.

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TABLE TENNIS

National Table Tennis: Jaipur: **Men** – Bank Sports Control Board beat Tamil Nadu 3–0.

Women: Petroleum Sports Control Board beat Railways 3–0.

Men–singles: Kamalesh Mehta (B.S.C.B.) beat S. Raman (Tamil Nadu) 13–21, 21–18, 19–21, 24–22, 21–14.

Women: Mandu Gosh (Railways) beat Bhuvaneswary (Tamil Nadu) 21–13, 19–21, 21–17, 16–21, 21–14.

Commonwealth Table Tennis: Men: 1. England, 2. India. **Women:** 1. Honkong, 2. India. In Men singles India's Kamalesh Mehta finished runner up. Canada's Johny Huing beat him 21–13, 21–12, 21–17 in final.

World Table Tennis: China, Japan: **Men:** Sweden beat Yugoslavia 3–2. **Women:** United Korea beat China 3–2.

Men's Singles: Georgen Persen (Sweden) beat Janov Waldner (Sweden) 21–19, 21–18, 21–18. Women's singles: Deng Yaping (China) beat Li Bun Hui (Korea) 21–13, 21–18, 21–14.

TENNIS

Australian Open: Men: Boris Becker (Germany) beat Ivan Lendl 1–6, 6–4, 6–4, 6–4; **Women:** Monica Seles (Yugoslavia) beat Jana Novotna 5–7, 6–3, 6–1.

French Open: Paris: **Men:** Jim Courier, US beat

Wimbledon Winners

Year	Men	Women
1877	S.W. Gore	
1878	P.F. Hadon	
1879	J.T. Haydley	
1880	J.T. Hartley	
1881	W. Renshaw	
1882	W. Renshaw	
1883	W. Renshaw	
1884	W. Renshaw	Maud Watson
1885	W. Renshaw	Maud Watson
1886	W. Renshaw	Miss Bingley
1887	H.F. Lawford	L. Dod
1888	W. Renshaw	L. Dod
1889	W. Renshaw	C.W. Hilyard
1890	W.J. Hamilton	L.. Rice
1891	W. Baddeley	L. Dod
1892	W. Baddeley	L. Dod
1893	J. Pim	L. Dod
1894	J. Pim	C.W. Hillyard
1895	W. Baddeley	C. Cooper
1896	H.S. Mahany	C. Cooper
1897	R.F. Doherty	C.W. Hillyard
1898	R.F. Doheerty	C. Cooper
1899	R.F. Doherty	C.W. Hillyard
1900	R.F. Doherty	C.W. Hillyard
1901	R.F. Doherty	A. Sterry
1902	A.W. Gore	M.E. Robb
1903	H.L. Doherty	D.K. Douglas
1904	H.L. Doherty	D.K. Douglas
1905	H. L. Doherty	M. Sutton
1906	H.L. Doherty	D.K. Douglas
1907	N.E. Brookes	M. Shutton
1908	A.W. Gore	A. Sterry
1909	A.W. Gore	D.P. Boothby
1910	A.W. Wilding	Lambert Chambers
1911	A.F. Wilding	Lambert Chambers
1912	A.F. Wilding	Mrs. Dr. Lordcome
1913	A.F. Wilding	Lambert Chambers
1914	N.E. Brookes	Lambert Chambers
1919	G.L. Patterson	Suzanne Lenglen
1920	W.T. Tilden	Suzanne Lenglen
1921	W.T. Tilden	Suzanne Lenglen
1922	G.L. Patterson	Suzanne Lenglen
1923	W.M. Johnston	Suzanne Lenglen
1924	J. Borotra	Kitty McKane
1925	R. Lacoste	Suzanne Lenglen
1926	J. Borotra	Kitty McKane Godfree
1927	H. Cochet	Helen Wills
1928	R. Lacoste	Helen Wills
1929	H. Cochet	Helen Wills
1930	W.T. Tilden	Helen Wills Moody
1931	S.B. Wood	Cilly Aussem
1932	H.E. Vines	Helen Wills Moody

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Andre Agassi, U.S.; **Women:** Monica Seles, Yugoslavia beat Anantxa Sanches.

U.S. Open:Men: Stefan Edberg beat Courier 6–2, 6–4, 6–0. **Women:** Monica Seles beat Martina Navratilova 7–6, 6–1. **Mens' doubles:** John Fitzgerald (Australia) – Anders Jarryd (Sweden) beat Scot Davis – David Pate 6–3, 3–6, 6–3, 6–3. 'Grand Slam Win' for doubles; first since 1967.

Junior U.S. Open: Leander Paes (India) beat Karim Alamin (Morocco) 6–4, 6–4.

Federation Cup: Nottingham: Spain beat U.S.A. 2–1.

Wimbledon: Men singles: Michael Stich beat Boris Becker 6–4, 7–6 (7–4), 6–4; **Women:** Steffi Graf beat Gabriela Sebatini 6–4, 3–6, 8–6. **Men's doubles:** John Fitzgerald – Andres Jarry beat Javier Prana – Leonardo Lavale: 6–4, 6–7 (7–9), 6–1.

VOLLEY BALL

National Senior Volleyball: Bombay: Men: Tamil Nadu beat Kerala. 9-15, 15-8, 15-9, 15-4. Women: Railways beat Tamil Nadu 15-13, 6-15, 15-7, 15-6.

National Junior Volley: Calcutta: Boys: Tamil Nadu Champion. Girls: Kerala beat Madhya Pradesh.

Federation Cup, Cudallore: Women: Railways beat Tamil Nadu 15-7, 11-15, 15-8, 15-4. Men: Kerala Police beat Hindustan Photo Films.

Asian Volleyball: Perth: Japan beat holders South Korea 10-15, 16-14, 15-13, 10-15, 15-8.

THE CHAMPIONSHIPS WIMBLEDON

1933	J.H. Crawford	Helen Wills Moody
1934	F.J. Perry	Dorothy Rand
1935	F.J. Perry	Helen Wills Moody
1936	F.J. Perry	Helen Hull Jacobs
1937	J.D. Budge	Dorothy Rand
1938	J.D. Budge	Helen Wills Moody
1939	R.L. Riggs	Alice Marble
1946	Y. Petra	Panline Betz
1947	J. Kramer	Margaret Osborne
1948	R. Falkenburg	Louise Brough
1949	F.R. Schoeder	Louise Brough
1950	B. Patty	Louise Brough
1951	R. Savitt	Doris Hart
1952	F.A. Sedgeman	Maureen Connolly
1953	V. Seixas	Maureen Connolly
1954	J. Drobny	Maureen Connolly
1955	A. Trabert	Louis Brough
1956	L. A. Hoad	Shirley Fry
1957	L. A. Hoad	Althea Gibson
1958	A.J. Cooper	Althea Gibson
1959	A. Olmedo	Maria Bueno
1960	N.A. Fraser	Maria Bueno
1961	Rod Laver	Angela Mortimer
1962	Rod Laver	Karen Hantze Susman
1963	C.R. McKinley	Margaret Smith
1964	S. Emerson	Maria Bueno
1965	S. Emerson	Margaret Smith
1966	Manuel Santana	Billie Jean King
1967	John Newcombe	Billie Jean King
1968	Rod Laver	Billie Jean King
1969	Rod Laver	Ann Haydon Jones
1970	John Newcombe	Margaret Smith Court
1971	John Newcombe	Evonne Goolagong
1972	Stan Smith	Billie Jean King
1973	Jan Kodes	Billie Jean King
1974	Jimmy Connors	Chris Evert
1975	Arthur Ashe	Billie Jean King
1976	Bjorn Borg	Chris Evert
1977	Bjorn Borg	Virginia Wade
1978	Bjorn Borg	Martina Navratilova
1979	Bjorn Borg	Martina Navratilova
1980	Bjorn Borg	Evonne Goolagong
1981	John McEnroe	Chris Evert Lloyd
1982	Jimmy Connors	Martina Navratilova
1983	John McEnroe	Marrtina Navratilova
1984	John McEnroe	Martina Navratilova
1985	Boris Becker	Martina Navratilova
1986	Boris Becker	Martina Navratilova
1987	Pat Cash	Martina Navratilova
1988	Stefan Edberg	Steffi Graf
1989	Boris Becker	Steffi Graf
1990	Stefan Edberg	Martina Navratilova
1991	Michael Stich	Steffi Graf

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Jimmy's Open

Bye for now: Jimmy Connors bids farewell to the fans who helped sustain him in his winning streak that ended with a defeat by Jim Courier in the US Open semi finals

The 1991 US Open Tennis Championships long will be remembered for the old man who played when it seemed he couldn't and for the teenage girl who didn't play when perhaps she could have.

Jimmy Connors didn't win the US Open, but emerged as much a champion as titlist Stefan Edberg. Monica Seles captrued the women's crown, although her shining moment will be diminished for her refusal to play on another day.

The small agate lines in the record books will forever more show that Edberg and Seles were the 1991 US open champions. For those who witnessed the championship, though, it was simply the Jimmy Connors Open.

After undergoing career-threatening wrist surgery last October, forcing him to sit out five months, Connors made a remarkable run at the Open. He was admitted to the draw as a wild card, and carried a ranking of No. 174, but still fought his way into the semifinals before losing to Jim Courier.

Connors was fortunate in as much as top seed Boris Becker was knocked out of his quarter of the draw in the third round, and thus had to deal with only one seeded player–No. 10 Karel Novacek–until the semifinals. But for a man who feared a few months earlier he might never play again, and who turned 39 midway through the championship, his accomplishment was as rewarding as any of the five Open crowns he won during his prime.

Connors, who spoke glowingly five years ago of how enticing retirement would be, is now thinking in terms of "a new beginning."

"I am almost starting out like I was 17 years old again because I never, ever thought I'd play tennis again." he said following the victory over Novacek. "Because of that, my enthusiasm and my intensity and my enjoyment for the game are all lifted."

His semifinal showing vaulted Connors 108 places in the rankings to 66.

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THE BEST 100 M TIMINGS

Time	Name	Nation	Venue	Date
9.86	Carl Lewis	U.S.A.	Toyko	25 Aug '91
9.90	Leroy Burrell	U.S.A.	New York	14 June '91
9.92	Carl Lewis	U.S.A.	Seoul	24 Sept '88
9.93 A	Calvin Smith	U.S.A.	Air Force Academy	3 Jul '83
9.93	Caril Lewis	U.S.A.	Rome	30 Aug '87
9.93	Carl Lewis	U.S.A.	Zurich	17 Aug '88
9.94	Leroy Burrell	U.S.A.	Houston	16 Jun '89
9.95 A	Jim Hines	U.S.A.	Ciudad Mexico	14 Oct '68
9.95	Ben Johnson	Canada	Moskva	9 Jul '86
9.95	Ben Johnson	Canada	Koln	16 Aug '87
9.96	Mel Lattany	U.S.A.	Athens	5 May '84
9.96	Carl Lewis	U.S.A.	Indianapolis	15 Jul '88
9.96	Carl Lewis	U.S.A.	Indianapolis	15 Jul '88
9.96	Leroy Burrell	U.S.A.	Villeneuve d'Ascq	29 Jun '90
9.96 A	Leroy Burrell	U.S.A.	Sestriere	8 Aug '90
9.97	Carl Lewis	U.S.A.	Modesto	14 May '83
9.97	Calvin Smith	U.S.A.	Zurich	24 Aug '83
9.97	Ben Johnson	Canada	Zurich	19 Aug '87
9.97	Calvin Smith	U.S.A.	Zurich	17 Aug '88
9.97	Carl Lewis	U.S.A.	Seoul	24 Sept '88
9.97	Linford Christie	GRB	Seoul	24 Sept '88
9.97	Ray Stewart	Jamaica	Waco	20 May '89
9.97	Leroy Burrell	U.S.A.	Villeneuve d'Ascq	29 Jun '90
9.98	Silvio Leonard	Cuba	Guadalajara	11 Aug '77
10.00	Marian Woronin	Poland	Warsaw	9 Jun '84

THE 25 BEST JUMPS IN HISTORY

Mark	Name	Nation	Pos.	Venue	Date
8.95	Mike Powell	U.S.A.	1	Tokyo	30 Aug '91
8.90 A	Bob Beamon	U.S.A.	1	Ciudad Mexico	18 Oct '68
8.86 A	Robert Emmiyan	U.R.S.	1	Tsakhkadzor	22 May '87
8.79	Carl Lewis	U.S.A.	1	Indianapolis	19 Jun '83
8.79 i	Lewis		1	New York	27 Jan '84
8.76	Lewis		1	Indianapolis	24 Jul '82
8.76	Lewis		1	Indianapolis	18 Jul '88
8.75	Lewis		1	Indianapolis	16 Aug '87
8.74	Larry Myricks	U.S.A.	2	Indianapolis	18 Jul '88
8.72	Lewis		1	Seoul	26 Sep '88
8.71	Lewis		1	Westwood	13 May '84
8.71	Lewis		1	Los Angeles	19 Jun '84
8.70	Myricks		1	Houston	17 Jun '89
8.67	Lewis		1	Roma	5 Sep '87
8.66	Lewis		-	Walnut	26 Apr '87
8.66	Myricks		1	Tokyo	23 Sep '87
8.66	Mike Powell	U.S.A.	1	Vileneuve d'Ascq	29 Jun '90
8.65	Lewis		1	Bruxelles	24 Aug '84
8.65	Lewis		1	San Jose	26 Jun '87
8.63	Myricks		2	San Jose	26 Jun '87
8.62	Lewis		1	Sacramento	20 Jun '81
8.62	Lewis		1	Bruxelles	30 Aug '85
	(21/5)				
8.54	Lutz Dombrowski	G.D.R.	1	Moskva	28 Jul '80
8.51	Jaime Jefferson	CUB	1	La Habana	12 May '90
8.46	Leonid Voloshin	U.R.S.	1	Tallinn	5 Jul '88

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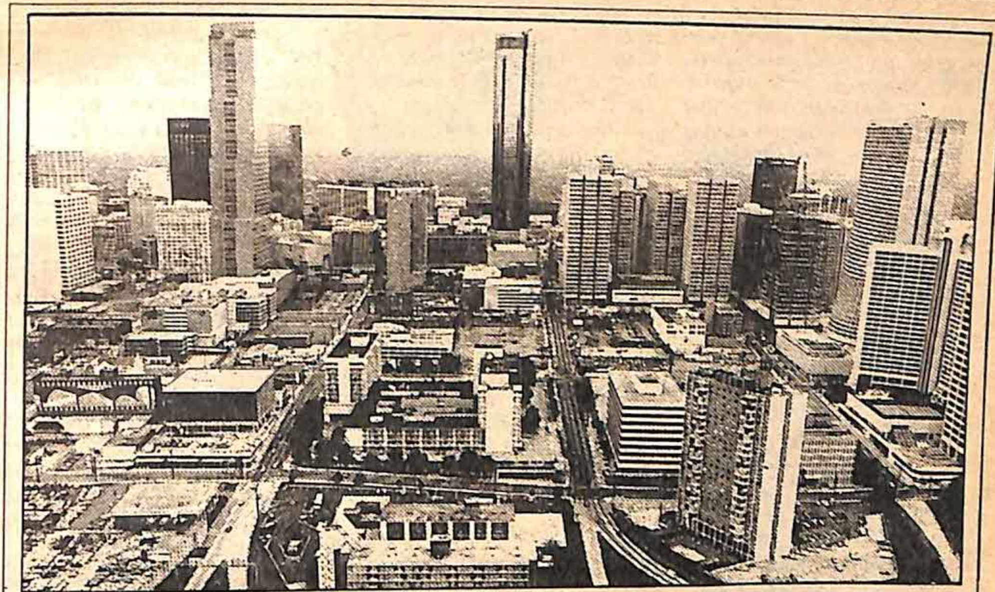

No Bribe, Says Atlanta

Atlanta Olympic organising officials vehemently denied allegations that bribes were paid to win the right to host the 1996 Games and said they were considering legal action.

Atlanta organising committee chief Billy Payne said the bribery allegations, first reported in the German magazine Der Spiegel, were false and apparently orginated from cities which lost the bid to the southern US city.

A top IOC official has said he had evidence that bribes influenced the selection of Atlanta as host of the 1996 Games. "I have no knowledge of any inducements or bribes either offered or given to or received by IOC members", said Mr Kevan Gosper, an IOC vice-president. "I regret we are a target for this sort of allegation."

The German news magazine Der Spiegel had claimed that Atlanta Olympic officials offered IOC members gold credit cards, free heart surgery, scholarships in American universities for their children and cash bribes up to $ 120,000 each.

The magazine said 15 IOC members met at a hotel in Jerusalem in September 1990, just days before the vote in Tokyo and agreed on how much money they would accept to vote for Atlanta.

The allegations were attributed to unidentified people associated with the failed 1996 bids of Athens (Greece) and Melbourne (Australia).

More than a year after the vote, the IOC continues to be hounded by controversy over its choice specifically accusations that it sold out to commercial sponsors by choosing Atlanta, home of Coca Cola, over sentimental favourite Athens, birthplace of the modern Games in 1896.

But Mr Gosper insisted the vote was based solely on merit, "Atlanta won on fair ground", he said.

The Der Spiegel report claimed that Australian and Greek Olympic officials have a list of 18 IOC members who allegedly took bribes, as well as 26 officials who were given large numbers of gifts.

Der Spiegel alleged that Australian IOC members, apparently angry over the bypassing of Melbourne, had threatened to disclose evidence of bribery unless the IOC chooses Sydney to host the Games in 2000.

In the wake of the controvesy over Atlanta's selection, the IOC held a meeting in Lausanne last winter to allow the losing cities to air their grievances about the bidding process.

Monica Seles' personal

Monica Seles, who completed a near-perfect year in 1991 with a victory in the season-ending Virginia Slims championship, hopes 1992 can be even better.

At 17, Seles is the youngest player in the professional era to be honoured as the world champion of women's tennis, a designation she officially won on November 25 with the release of the year's final point rankings. She turned 18 on December 2.

"Winning the world champion crown means I met one of my preseason goals", the Yugoslavian left-hander said. "Before the year I said I wanted to aviod first and second-round losses. I was able to do that, and the consistency brought me to the next level. Next year would be wonderful if I reached all the finals and won all the finals."

She almost did that in 1991. reaching the final in all 16 events she played, winning 10, including the Australian Open, the French Open and the U.S. Open.

On November 24th, she won the Virginia Slims championships for the second straight year.

Her 20 titles before the age of 18 is second only to the 23 won by Tracy Austin. But Austin had only one Grand Slam crown before turning 18, the 1979 U.S. Open, while Seles has won four, three in 1991 plus the 1990 French Open.

In only three full years on circuit, Seles has earned more than $ four million, putting her sixth on the all-time money list.

In 1991 Seles has a 74-6 match record, losing twice to Navratilova, twice to Steffi Graf and once each to Gabriela Sabatini and Jennifer Capriati, all of whom are ranked in the top six in the world. She became only the seventh player in the pro era to win 10 or more tournaments in a single year.

By winning the Virginia Slims championship, Seles completed a personal Grand Slam.

Seles, though, skipped Wimbledon because of shin splints, and created a lot of controversy when she disappeared for several weeks instead of explaining her injury.

Referring in part to this following victory at New York, Seles said she is learning from her mistakes.

There were some tough times this year, but I think the good times overshadow this year, and luckily my whole career", she said, "Looking back at the year, I wish some things never happened and I wish they will never happen again. But I always learn. I learned a lot from last year and I learned a lot this year. I'm just going to try to do it better next year. I'm not going to dwell on what I could'nt do this year and let it bother me too long. There are many more years, hopefully, that I'm going to play tennis."

Seles' victory over Martina in the Virginia Slims provided a fitting finish to an historic season.

Seles carved out a 6-4, 3-6, 7-5, 6-0 win over the fourth-ranked former number one to retain her crown in the elite 16 player season finale and collect her 10th title in a phenomenal year that saw her end Steffi Graf' record run of 186 consecutive weeks at number one.

In the previous year there were four different Grand Slam winners–all with a legitimate claim to being the best–and two or three more players snapping on their heels.

"I think this year has been wonderful. It's nice to hold that position (number one ranking) throughout the year, but at the end (of the year) it is the most important", said Seles, winner of 74 of 80 matches in 1991.

"I think my lucky stars for how great a year I had."

The Yugoslav's amazing accomplishments in 1991 include reaching all the 16 finals in as many tournaments. Graf is the only other player in history to go an entire season without losing prior to the finals.

Grand Slam

Seles created a stir with an 11th hour withdrawal from Wimbledon because of injury, incurring a fine. She also pulled out of the Federation Cup international team championship.

With no elaboration and much mystery, she went into seclusion. But when she emerged a month later, recovered from a case of shin splints, she took up where she left off.

The 35-year-old Navratilova, who won the title five times in 12 trips to the final, was impressed with her conqueror.

"She puts more pressure on you from the baseline than anybody I have ever played against. You can't relax for one second with her. she is very, very mentally tough", said Navratilova, one of only four players to beat Seles this year.

"Steffi as great as she is and the unbelievable forehand that she has, you get it to the back hand and you are okay for a little bit. With Monica you don't really have an opening.

She doesn't look like a great athlete", added Navratilova. "She doesn't look like she is going to get there, but the next thing you know the ball is going by you."

Of course Navratilova, who remains one title away from breaking the record total of 157 she shares with Chris Evert, knows better than anyone that the feeling of invincibility is fleeting, no matter how dominant you may be.

"You know in my time. I was going to reign forever, then Steffi was going to be there forever", she said, "Here comes Monica now, but it's hard to keep it up.

In 1990, Seles said she had to work on cutting down early-round eliminations. Now that she has done that with greater success then even she would have dared hope for, what is left for 1992."

"I am just going to try to do it better next year".

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Gulzari Lal Nanda : 1966-1966 (Acting)
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Charan Singh : 1979-1980
Indira Gandhi : 1980-1984
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P.V. Narasimharao : 1991-Till date

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Neelam Sanjiva Reddy : 1977-(March-July)
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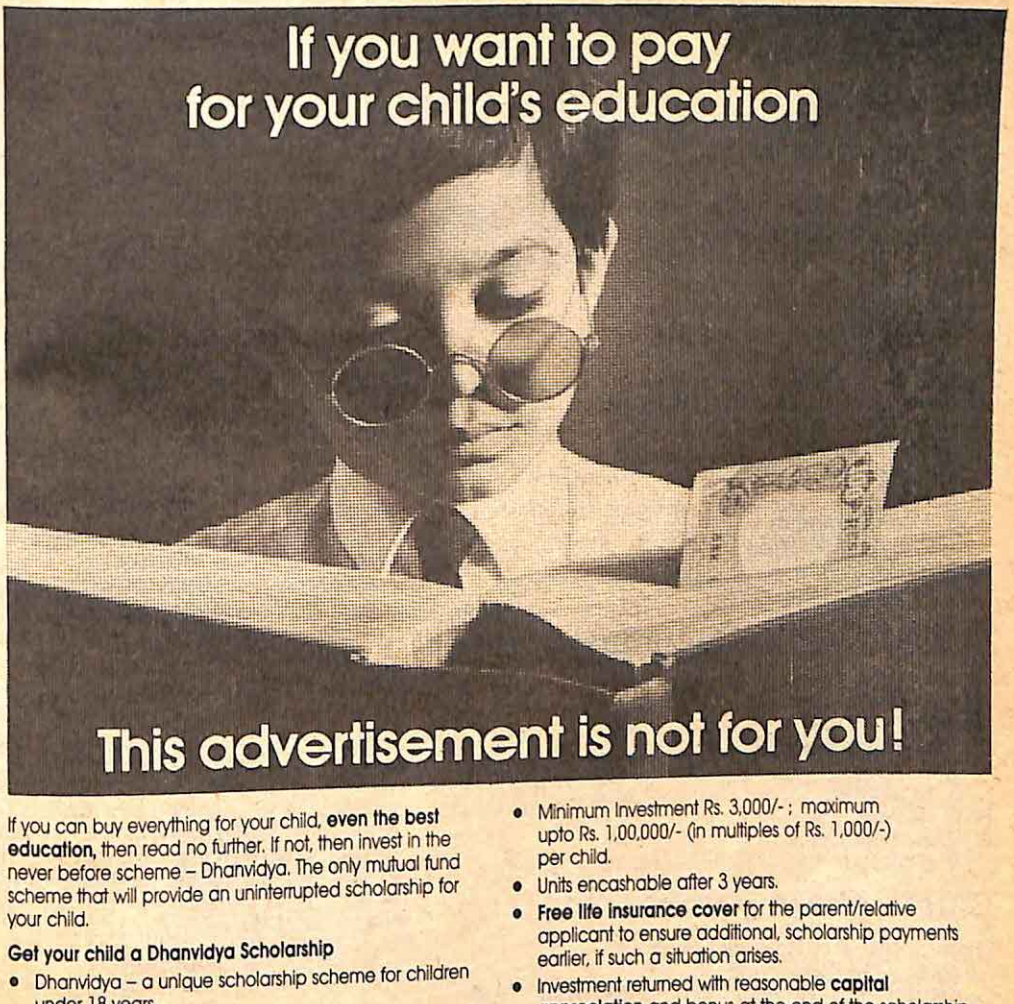
Balram Jhakar : 1980-1989
Rabi Ray : 1989-1991
Shivraj Patil : 1991-Till date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Harilal J. Kania	1950-1951
M. Patanjali Sastri	1951-1954
Mehar Chand Mahajan	1954-1954
B. K. Mukherjea	1954-1956
S. R. Das	1956-1959
Bhuvaneshwar Prasad Sinha	1959-1964
P. B. Gajendragadkar	1964-1966
A. K. Sarkar	1966-1966
K. Subba Rao	1966-1967
K. N. Wanchoo	1967-1968
M. Hidayatullah	1968-1970
J. C. Shah	1970-1971
S. M. Sikri	1971-1973
A. N. Ray	1973-1977
M. H. Baig	1977-1978
Y. V. Chandrachud	1978-1985
P. N. Bhagwati	1985-1986
R. S. Pathak	1986-1989
E. S. Venkataramiah	1989 (June-Dec.)
Sabyasachi Mukherjee	1989-1990
Ranganath Mishra	1990-1991
K.N. Singh	1991-1991

Chief Election Commissioners

Sukumar Sen	1950-1958
K. V. K. Sundaram	1958-1967
S. P. Sen Verma	1967-1972
Dr. Nagendra Singh	1972-1973
T. Swaminathan	1973-1977
S. L. Shakdhar	1977-1982
R. K. Trivedi	1982-1985
R. V. S. Peri Sastri	1985-1990
T. N. Sheshan	1990-Till date

Chiefs of Army Staff

General Maharaj Rajendra Sinhji	1955-1955
General S. M. Srinagesh	1955-1957
General K. S. Thimayya	1957-1961
General P. N. Thapar	1961-1962
General J. N. Chaudhuri	1962-1966
General P. K. Kumaramangalam	1966-1969
General S. H. F. J. Manekshaw	1969-1972
Field Marshal S. H. F. J. Manekshaw	1972-1973
General G. G. Bewoor	1973-1975
General T. N. Raina	1975-1978
General O. P. Malhotra	1978-1981
General K. V. Krishna Rao	1981-1983
General A. S. Vaidya	1983-1986
General K. Sundarjee	1986-1988
General V. N. Sharma	1988-1990
General S. F. Rodrigues	1990-Till date

(General Sir Roy Bucher (1948-49), General K. M. Cariappa (1949-53) and General Maharaj Rajendra Sinhji (1953-55) served as commanders-in-chief of Indian Army. General Kariappa was conferred the rank of Field Marshal in 1986).

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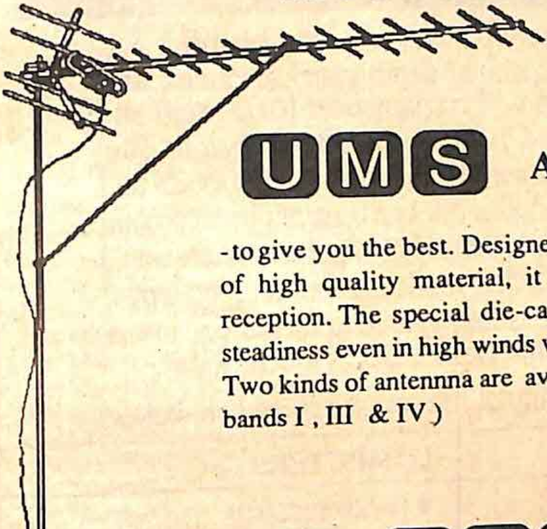

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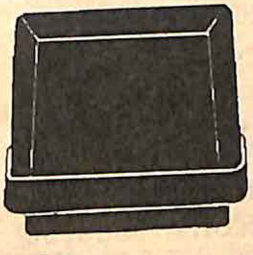

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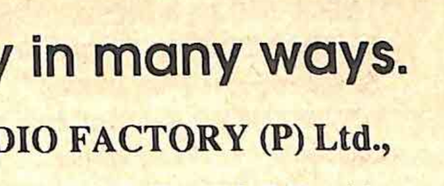

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Vice-Admiral B. S. Soman : 1962-1966
Admiral A. K. Chatterjee : 1966-1970
Admiral S. M. Nanda : 1970-1973
Admiral S. N. Kohli : 1973-1976
Admiral J. L. Cursetji : 1976-1979
Admiral R. L. Pereira : 1979-1982
Admiral O. S. Dawson : 1982-1984
Admiral R. H. Tahiliani : 1984-1987
Admiral J. G. Nadkarni : 1987-1990
Admiral L. Ramdas : 1990-Till date

Chiefs of Air Staff

Air Marshal Sir Thomas Emhirst : 1947-1950
Air Marshal Sir Ronald Lvelaw Chapnam : 1950-1951
Air Marshal Sir Gerald Gibbs : 1951-1954
Air Marshal S. Mukherjee : 1954-1960
Air Marshal A. M. Engineer : 1960-1964
Air Chief Marshal Arjan Singh : 1964-1969
Air Chief Marshal P. C. Lal : 1969-1973
Air Chief Marshal O. P. Mehra : 1973-1976
Air Chief Marshal H. Moolgavkar : 1976-1978
Air Chief Marshal I. H. Latif : 1978-1981
Air Chief Marshal Dilbagh Singh : 1981-1984
Air Chief Marshal L. K. Katre : 1984-1985
Air Chief Marshal D. A. La Fontaine : 1985-1988
Air Chief Marshal S. K. Mehra : 1988-1991
Air Chief Marshal N.C. Suri : 1991-Till date

Union Council of Ministers

P.V. Narasimha Rao : Prime Minister
Personnel, Public Grievances, Science and Technology, Space, Ocean Development, Electronics, Atomic Energy, Chemical and Fertilisers, Rural Development, Civil Supplies and Public Distribution. Additional charge of Defence and Industry.

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Ajit Kumar Panja : Information and Broadcasting
Ashok Gehlot : Textiles
Rajesh Pilot : Communications
Kamal Nath : Environment and Forests
Jagdish Tytler : Surface Transport
Kalpanath Rai : Power and Non-conventional Energy Sources
K. Ramamurthy : Labour
Balram Singh Yadav : Mines
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Tarun Gogoi : Food
Giridhar Gomango : Food Processing Industries

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Margaret Alva : Personnel, Public Grievances and Pensions
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Mamata Banerjee : Human Resources Development (Dept. of Youth Affairs and Sports)
Eduardo Faleiro : External Affairs
M.O.H. Farook : Civil Aviation and Tourism
M.M. Jacob : Parliamentary Affairs and Home
Rangarajan Kumaramangalam : Parliamentary Affairs, Law, Justice and Company Affairs
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K.C. Lenka : Agriculture
M. Mallikarjun : Railways
Chinta Mohan : Chemicals and Fertilisers
Uttambhai H. Patel : Rural Development
Shantaram Potdukhe : Finance
Mullappally Ramachandran : Agriculture
Dalbir Singh : Finance
G. Venkat Swamy : Rural Development
P.K. Thungon : Industry

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Chairman: MRTPC	Justice R. A. Jahagirdar
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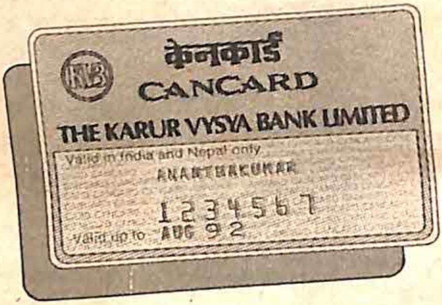

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India's Woman at UNICEF

UNICEF in New Delhi late last year held a small party to felicitate Ms Meera Seth on her becoming chairperson of the executive board of the organisation. It was a special occasion because not since 1953-54 when Vijaya Lakshmi Pandi was president of the U.N. general assembly has an Indian woman acquired such a senior position in the U.N. system.

The 41–member board of UNICEF elected Ms Seth for the top post by name and not by the country she represented. Ms Seth was earlier vice chairman of the board. She replaces Elizabeth Palme, wife of the assassinated former Prime Minister of Sweden. She has a one-year term as chairman.

Representatives of women's organisations and the women's department turned out in full force. Also present were several diplomats and some secretaries to government. It will be interesting to see if Ms Seth's elevation in the executive board of UNICEF will get India around to signing the International Convention on the Rights of the Child.

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JAC

Salary of President, P.M.

NAME OF OFFICE	SALARY	ALLOWANCES AND PERQUISITES
President	20,000	Entitled to the same allowances and privileges which the Governor-General of India was entitled to immediately before the commencement of this Constitution. Pension Rs. 15000/- pm.
Vice-President	7,500	
Minister of Government (including the Prime Minister)	2,250	a) Use of furnished residence without payment of rent or maintenance charges. b) Sumptuary allowance: PM: Rs. 1500, Cabinet Minister Rs.1000, Minister of State: Rs. 500, Dy. Minister: Rs. 300 (p.m.) c) TA, free medical facilities, car allowance, etc. Minister cannot draw salary/allowance as MP.
Deputy Minister	1,750	
Member of Parliament	1,000	a) Constituency allowance of Rs.1,250 p.m. (includes housing, telephone, water and electricity allowances). b) Daily allowance of Rs. 75 per day for the period of residence on duty. c) Travelling allowances, free medical facilities etc.
Leader of Opposition in Parliament	2,250	a) Use of a furnished residence free of rent and maintenance charges b) Travelling allowances, free medical facilities etc c) Subject to Central Government rules, each of them shall be entitled to telephone and secretarial facilities and a conveyance allowance of Rs. 300 p.m. However, he should not draw salary or allowances as a Member of Parliament.
Officers of Parliament		
1) Speaker of Lok Sabha	2,250	a) Sumptuary allowance–Rs.500 p.m. for Speaker and Chairman, Rs. 250 p.m. for Deputy Speaker and Deputy Chairman. b) Use of a fully furnished residence free of rent and maintenance charges. c) Travelling allowances, free medical facilities, motor car allowance, etc. Officers of parliament are not allowed to draw salary or allowances as Members of Parliament.
2) Chairman of Rajya Sabha	2,250	
3) Deputy Speaker	2,000	
4) Deputy Chairman	2,000	
Supreme Court		
1) Chief Justice	10,000	a) Use of an official residence without payment of rent. b) Reimbursement of expenses incurred in travelling on duty within the territory of India. c) Leave allowances and pension.
2) Any other judge	9,000	
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1) Chief Justice	9,000	
2) Any other judge	8,500	
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2. Vice President
3. Prime Minister
4. Governors of states within their respective states
5. Former Presidents
6. Chief Justice of India
   Speaker of the Lok Sabha
7. Cabinet Ministers of the Union
   Chief Ministers of states within their respective states
   Deputy Chairman, Planning Commission
   Leaders of Oppositioin in the Rajya Sabha and the Lok Sabha
   Holders of the Bharat Ratna decoration
8. Ambassadors Extraordinary and Plenipotentiary and High Commissioners of Commonwealth countries accredited to India
   Chief Ministers of states outside their respective states
9. Judges of the Supreme Court
10. Deputy Chairman, Rajya Sabha
    Deputy Chief Ministers of states
    Deputy Speaker, Lok Sabha
    Members of the Planning Commission
    Ministers of State of the Union and any other Ministers in the Ministry of Defence for defence matters
11. Attorney General of India
    Cabinet Secretary
    Comptroller and Auditor-General of India
    Lieutenant Governors within their respective union territories
12. Chiefs of Staff holding the rank of full General or equivalent rank
13. Envoys Extraordinary and Ministers Plenipotentiary accredited to India
14. Chairmen and Speakers of State legislature within their respective states,
    Chief Justice of High Courts within their respective jurisdiction states
15. Cabinet Ministers in states within their respective states
    Chief Ministers of union territories and Chief Executive Councillor, Delhi, within their respective union territories.
    Deputy Ministers of the Union
16. Officiating Chiefs of Staff holding the rank of Lieutenant General or equivalent rank
17. Chairman, Minorities Commission
    Chairman, Scheduled Castes and Scheduled Tribes Commission
    Chairman, Union Public Service Commission
    Chief Election Commissioner
    Chief Justice of High Courts outside their respective jurisdictions
    Puisne Judges of High Courts within their respective jurisdictions
18. Cabinet Ministers in state outside their respective states
    Chairmen and Speakers of state legislatures outside their respective states
    Chairman, Monopolies and Restrictive Trade Practices Commission
    Deputy Chairmen and Deputy Speakers of state legislatures within their respective states
    Ministers of State in states within their respective states
    Ministers of union territories and Executive Councillors, Delhi, within their respective union territories

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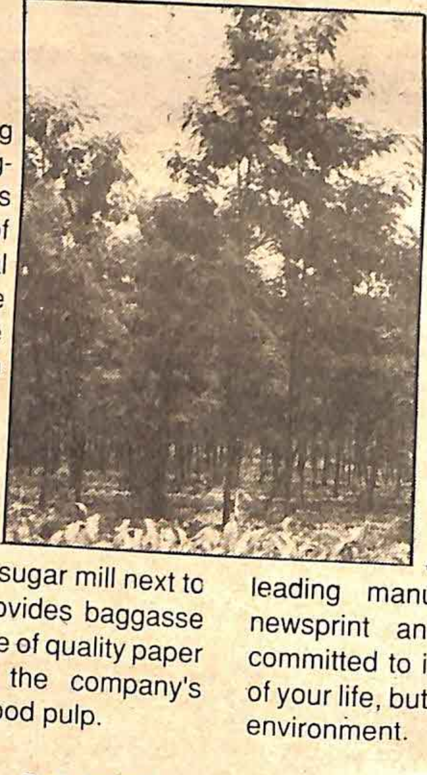

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THE WORLD

January

1. India starts a two-year stint as member of the United Nations Security Council.
2. Sri Lanka government, responding to LTTE call for ceasefire, declares a seven-day truce.
4. Edward Shevernadze opposes wider powers to Gorbachev; India elected Chairman of UN Security Council's monitoring committee on arms embargo on South Africa.
7. Coup attempt in Haiti by Roger Lafontant, follower of Ex-dictator Jean Claude Duvalier, fails.
9. Geneva talks to end Gulf war fail; Soviet troops move to the eight rebel republics.
10. UN Secretary General Peres de Cuellar dashes to Bagdad as Geneva talks to end the Gulf war fail.
12. Valentine Pavlov appointed Prime Minister of Soviet Union replacing Nikolai Rishkov who resigned.
13. Peres de Cuellar returns from Bagdad after the failure of talks to end the Gulf war; Soviet tanks enter Lithuania, 14 Lithuanians killed.
14. Dr. Mario Soares re-elected President of Portugal.
15. Three PLO leaders including second-in-command Abu lad shot dead in Tunis; Soviet tanks launch attack on Latvia.
16. War imminent, Iraq refuses to withdraw from Kuwait even after deadline.
17. War erupts in the Gulf; Iraq bombed; 'Blue chip' war reported 'live' for 24-hours by the US television network CNN. Helmut Kohl re-elected Chancellor of Germany.
18. Iraq launches missile attack on Israel; King Olav of Norway, world's oldest King, dies at the age of 87.
19. Israel braves missile attack again; Bahrain causeway closed.
20. US attacks Iraqi infantry; emergency in the Suez Canal zone; Anti-Gorbachev demonstration in Moscow on his action against the Baltics.
21. Iraq attacks Saudi, moves its war planes to Iran; Vice President Harimoniba takes over Presidentship in Seirra Leone; Umer Arthek Galib new Prime Minister of Somalia.
22. Israel attacked again; Iraq begins destroying Kuwaiti oilwells.
23. Iraqi missile attack, five killed in Israel; Indian ship "M.V. Continental' sinks off Greece, 26 killed.
24. Iraq launches Exocest missiles against the US-led naval forces in the Gulf.
25. Allied forces recapture the Kuwaiti island of Khura.
26. Jesuits celebrate the 450th anniversary of their founding and the 5th birth centenary of their founder Ignatius Layola.
27. French mirages join attack Iraq; Crude oil leaks into the Gulf from the damaged wells in Kuwait.
28. Iraqi cities pounded by Allied bombers; President Mohammed Siad Barre flees from Somalia as rebel army seizes control of the Presidential palace.
31. The Saudi town of Khafji recaptured from the Iraqis.

February

1. One hundred Iraqi tanks destroyed; Archbishop of Canterburry Dr. Robert Runcie, retires.
2. Six missile ships sunk in the Gulf.
3. Missile attack on Tel Aviv and Riyadh.
4. U.S. Defence budget cut as the threat from Soviet Union recedes.
5. Allied forces attack Iraqi republican guards, The last of the 1.25 lakh Indians in Kuwait manage to return to India.
6. Southern Iraqi targets bombed; Iraqi scud missiles attack Israeli nuclear facility north of Tel Aviv.
7. Iraq continues the scorched earth policy in Kuwait.
8. Riyadh attacked again.
9. Iraqis pound Kuwait with mortar shells;

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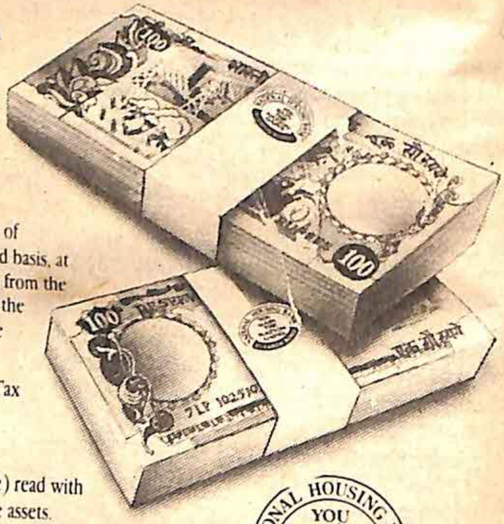

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Israel attacked again; Iraq breaks diplomatic relations with France; Gorbachev sends his emissary to Bagdad.
11. US marines move to Kuwaiti border from Saudi Arabia, Operation Desert storm.
12. Iraqi Scud missiles create havoc in Israel.
13. Missiles from American bombers pierce through Iraqi underground shelter killing many hundreds including women and children.
14. UN Secretary General Peres de Cuellar expresses his regret on the civilian toll in the bombing of underground shelter in Iraq.
15. Iraq agrees to withdraw from Kuwait and discuss the issue under UN resolution No. 660.
17. 'Isvestia' castigates Operation Desert Storm as 'Operation Desert Slaughter.'
18. Gorbachev presents new peace proposals for the Gulf; Israel expresses its willingness to sit for talks.
22. US gives ultimatum to Iraq to withdraw; Quincy Jones wins 7 Grammy awards; Thai Prime Minister Chatichai Choonhaven ousted by army generals in a bloodless coup.
23. Iraq rejects US ultimatum; Land war begins.
24. Groundwar intensifies, allied parachute forces capture Kuwait city; Iraq sets fire to hundreds of Kuwaiti oil wells.
25. Tank-battle rages in Kuwait; 20000 Iraqui soldiers taken prisoners; US soldiers enter Iraq; Warsaw Pact disbanded.
26. Kuait fully liberated; Sheikh Jabar, the exiled Prince, regains control of his emirate.
27. Americans die in Scud attack in Saudi Arabia; Bangladesh's 62.3 million voters go to the polls to elect a 300-member Parliament after 15 years of quasi-military rule; Allied forces cross the river Euphrates in Iraq.
28. Ceasefire in the Gulf, 50000 Iraqi soldiers taken prisoners; Begum Khalida Zia's Bangladesh Nationalist Party emerges as the largest single party in general elections.

March

2. Sri Lankan Defence Dy. Minister Ranjan Vijeratne dies in a motorcade explosion.
3. UN Security Council passes resolution embodying conditions for Gulf ceasefire.
17. Majority of over 80% of nearly 200 million Soviets support Unified Russia.
19. Mrs. Khaleda Zia appointed the first woman Prime Minister of Bangladesh.
23. UN lifts embargo on food supplies and medicines to Iraq; Sadddam shuffles his cabinet, Tariq Aziz Deputy Prime Minister.
24. Gorbachev says that republics unwilling to stay in a reformed Soviet Union could become allies like the East European countries; US not to take off India from special 301 list.
25. Sino-Indian relations have noticeably improved, says the Chinese Premier Li Peng.
26. Coup in Mali, President Maussa Traore arrested; 'Dances with Wolves' corners 7 Oscars.
29. 50000 Soviet troops withdrawn from Kremlin who were deployed to thwart Boris Yeltsin's supporters to hold a rally.
30. President Bush's National Security Adviser, Brent Scowcroft spent 2 days in the Middle East holding negotiations in secret.
31. Iraqi troops backed by Republican Guard crush the internal rebellion.

April

1. Albania holds its first free elections in 50 years; Georgians vote for independence from the Soviet Union.
2. The Russian Federation's full legislature rejects a proposal of no confidence in the President, Mr. Mikhail Gorbachev.
4. British author Graham Greene, 86, dies in Switzerland.
7. US planes start dropping food to Kurdish refugees fleeing to escape the Iraqi army crackdown.
8. The communists gain a 2–3 majority in Albania's first free-elections to the Parliament.
9. Soviet withdrawal from Poland begins.
10. The UN Security Council votes to establish a 300-member U.N. Iraq–Kuwait Observation Mission (UNICOM).
11. The Gulf war formally ends after 86 days.
12. Guilio Andreotti forms 50th postwar Italian Government; Repatriation of all the 62,000 Iraqi P.O.W completed; 140 die in Italian ferry mishap.
13. The Dalai Lama chosen for the Dr. Ambedkar International Award for his outstanding services for universal humanity;

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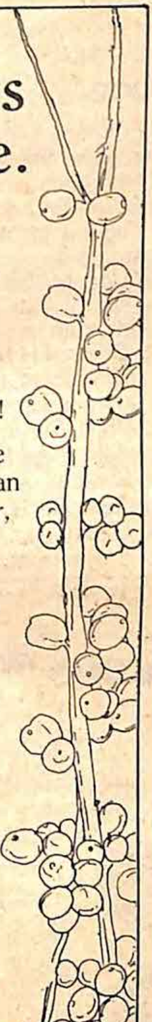

'Operation Comfort' by the US is proposed to take care of the fleeing Kurds, feeding 700000 a day in temporary settlements.

17. US decides to set up safety zones for Kurds in northern Iraq; Gorbachev becomes the first Soviet leader to visit Japan.

18. Japan and Soviet Union reach partial breakthrough in the Kuril Islands dispute.

19. Gorbachev announces plans for a new union treaty with 9 republics, leaving temporarily the other 6 independents; Premadasa invites LTTE for negotiations; Iraq and the UN sign an accord paving the way for setting up relief centres for the fleeing Kurdish refugees along routes they will take to return home.

21. US army convoy enters Northern Iraq to set up relief camps for Kurdish refugees.

23. President Mikhail Gorbachev recognises the sovereignty of republics.

24. UK announces Council tax in place of Poll tax to be effective from 1993.

26. Iraqi forces vacate the Kurdish town of Zakho.

29. Cyclone hits Bangladesh.

27.UN reports that thousands are dying in Kurdish refugee camps in Iran; Search begins for the new UN Secretary General.

May

1. In Bangladesh 1 lakh feared dead due to the worst cyclonic storm; Thailand lifts martial law.

2. Over 100,000 reported dead in Bangladesh's worst cyclone in 20 years.

3. Bangladesh's cyclone death toll is put at 5 lakhs; Communist leader Ramiz Alia reelected President of Albania; British Prime Minister John Major's Conservative Party faces defeat in the local poll.

5.Cyclone kills 1.25 lakh people in Bangladesh, relief ship sinks new Nao Khali.

6. Former Soviet Prime Minister Nikolai Rishkov decides to oppose Boris Yeltsin in the election to the Russian Federal Presidentship on June 12.

8. Cyclone hits Bangladesh again.

12. Nepal goes to polls – the first multi-party elections in 32 years.

14. Nepalese Prime Minister Krishna Prasad Bhattarai resigns following a stunning defeat even as his Nepali Congress maintained a steady lead; Winnie Mandela gets 6 year sentence following her conviction on charges of kidnapping and being an accessory to assault.
15. Edith Cressen elected the first woman Prime Minister of France.
16. Nepali Congress wins absolute majority in Parliamentary elections; Former Prime Minister Bhatta Rai defeated.
17. Nepali Congress gets simple majority.
18. Trade Unions in Russian Federation reject Gorbachev's ban on strike in strategic areas.
26. UNDP cites Sweden as "the best country to live in, as the human rights are concerned; Iraq comes at the bottom of the index; Girija Prasad Koirala of the Nepali Congress asked to form the new government in Nepal.
27. Australia's Laude airlines Boeing crashes in Thailand killing all the 233 persons.
28. Rebel forces capture Ethiopian capital and the Presidential palace, Mengistu flees to Zimbabwe.

June

1. Eritreans secede from Ethiopia and form own government.
4. Hundreds killed in an ammunition dump explosion in Addis Ababa.
5. Algeria in turmoil, parliament elections postponed.
8. At least 100 passengers killed when Karachi-Rawalpindi Express trains runs into a goods train in Sind.
12. General H.M. Ershad, Bangladesh's former President, sentenced to 10 years' rigorous imprisonment.
13. Boris Yeltsin wins absolute majority in the Russian Presidential elections.
14. Sweden decides to seek membership in the European Economic Community.
24. Cambodian factions agree on ceasefire.
26. Slovenia and Croatia break away.

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27. Yugoslav army moves into Slovenia.
28. Margaret Thatcher, former Prime Minister of Britain, announces her intention to retire from the House of Commons.
29. Benazir Bhutto's Pakistan People's Party routed in Pakistan occupied Kashmir's assembly elections.

July

1. Sweden formally applies for membership of the European Community; Warsaw Pact of 6 communist nations founded 36 years ago as a counterweight to NATO dissolved.
2. Namibian President, Sam Nujoma, awarded the 1990 Indira Gandhi Prize for Peace, disarmament and international understanding.
10. Boris Yeltsin sworn in as Russian President.
11. All the 264 Nigerian Muslim pilgrims die when their chartered jetliner crashes near Jeddah.
12. The Soviet parliament approves Gorbachev's union treaty.
15. The Fijian armed forces Chief Major General Sitivirui Rabuka resigns in order to take up the position of Dy. Prime Minister.
17. Shicheng, a budhist nun in Taiwan, awarded the 1991 Ramon Magsaysay prize.
25. Bangladesh government orders the freezing of all bank accounts of the deposed President, H.M. Ershad; Story-teller Issac Vashevis (Sinoju), Nobel Prize winner, dies at the age of 80 in Miami.
28. Slovenia declares war on Yugoslavia.
30. U.S. President Bush and Soviet leader Gorbachev sign the historic Strategic Nuclear Arms Treaty (START) in Moscow.

August

3. Kittu, the exiled Head of the Tamil Tiger's international office in London, ordered to leave Britain.
5. Soichiro Honda, founder of Japan's Honda Motor Company, dies at the age of 84.
6. Bangladesh switches over to the parliamentary form of government when the 12th constitutional amendment is unanimously passed.
8. John McCarthy, the Briton, held hostage in Lebanon for more than 3 years, freed; Shapone Bakhtiar, the Shah of Iran's last Prime Minister assassinated in France.
10. China decides to sign the Nuclear Nonproliferation Treaty.
11. American Edward Traci and a French man Leyrand freed from fundamentalist custody in Beirut.
16. The U.N. allows Iraqi oil sale to finance its essential civilian needs.
19. Gorbachev ousted in bloodless coup.
21. Soviet coup collapses; Estonia declares independence.
22. Gorbachev appoints new ministers; Interior Minister Boris Pugo commits suicide.
23. In a post coup development Gorbachev and Yeltsin agree to share powers; Lithuania bans Communist Party.
24. Soviet power structure: Gorbachev and Yeltsin reach understanding; KGB Chief's statue removed.
25. Gorbachev aide commits suicide; Byelorussia declares independence.
27. Moldavia declares independence; three Soviet Republics agree on economic union.
28. All KGB leaders sacked.
29. Russia and Ukraine–the largest Soviet Republics–announce agreement to form a temporary economic and military alliance.
30. Former Supreme Soviet President Anatoly Lukyanov arrested for his role in the coup attempt.
31. Soviet republics Kirghistan and Uzbekhistan, declare independence.

September

2. Union of Sovereign Soviet States proposed; US recongnizes Baltic states.
3. Britain and China pledge smooth transfer of Hong Kong to China in 1977; Over 70 LTTE militants reported killed in a major clash in Trincomalee.
4. Gorbachev agrees to grant independence to the three Baltic Republics, 51 years after they were annexed in a pact with Nazi Germany.
5. The Soviets' full parliament votes to dismantle the highly centralised Soviet Union and make it a loose confederation of Republics.
6. Soviet Union recognises the independ-

ence of three Baltic states.

7. India and China recognise Baltic states; Festival of India opens in Bonn.

8. Accra declaration of Non-Aligned Movement demands expansion of the 15-member Security Council; The new Swedish Conservative government decides to reopen the issue of the controversial India-Bofors howitzer deal.

10. Macedonia declares independence from Yugoslavia.

12. Group of Seven major industrialised countries pledges economic support to Soviet Union; Cuba assails Gorbachev for saying Moscow would withdraw thousands of toops from Cuba.

14. Black and White leaders sign peace pact to end the faction fighting that has claimed hundreds of lives in S. Africa.

15. United democrats which stand for greater degree of democracy win in the first free elections in the 149 years after Hong Kong became a British colony and 6 years before it was to return to Chinese sovereignty in 1997.

16. Swedish Prime Minister Ingvar Carlsson resigns after poll defeat.

18. India exempted from Pressle law with regard to US aid.

23. Armenia declares itself independent of Moscow.

24. France and Belgium send troops to Zaire to protect their nationals from riots sparked off by mutinuous soldiers.

25. Klaus Barbie, 77, known as the 'butcher of Lyons' dies in a French prison.

26. UN Security Council announces arms embargo against strife-torn Yugoslavia.

27. President Bush announces sweeping reductions in US tactical nuclear weapons and asked the Soviets to respond.

28. Jazz King Miles Daves dies at 65 in Los Angeles.

29. Zairean President Mobutu Seseseko and opposition leaders agree to set up an interim government following several days of rioting and looting that left more than 100 people dead.

October

1. Haiti President Jean Bertrand Aristide flies into exile after the army ousted him and the first democratically elected government in the nations' two centuries old history; India takes over the presidency of security council with the Ambassador C.R. Gharekhan in the chair.

2. Twelve former Soviet Republics agree to form an economic community of sovereign states.

3. Nadine Gordimer, a white south African, awarded Nobel Prize for Literature.

4. President Gorbachev sells his 74 page account of the foiled August coup for 500,000 dollars to the Harper Collins publishing company.

6. Gorbachev announces sweeping cuts in the Soviet nuclear arsenal in response to President Bush's initiative; One year moratorium on nuclear tests announced.

8. Bangladesh Parliament speaker, Abdul Biswas chosen President of the nation.

9. Romanian diplomat in Delhi, Livin Radu, kidnapped by Sikh ultras.

14. Myanmar's Opposition leader, San Suu Kyi, awarded the Nobel Peace Prize.

15. The U.S. senate narrowly confirms Clarence Thomas as the country's second black Supreme Court Judge ever, putting aside sexual harassment charges against him by Ms Anita Hill, a former aide.

20. Turkey's Motherland Party loses power after 8 years' rule in a general election.

21. Switzerland elects a new federal parliament; coalition government to continue.

22. An American hostage Jesse Turner released in Beirut.

27. Leading English poet George Granville Barker (78) dies.

30. Israelis, Arabs and Palestinians open talks in Madrid aimed at overcoming four decades of icy hostility and bloody conflict.

November

1. The Russian parliament grants more powers to President Boris Yeltsin to implement radical reforms; Firefighters parade the streets of Kuwait as last of the 640 oil blazes is put out; West Asia peace conference in Madrid ends without agreement on the next stage.

2. Frederick Chiluba, 47, leader of the Movement for Multi-Party Democracy, sworn in as President of Zambia.

3. Taiwan seeking to mend estrained relations with China sends a delegation to Beijing.
4. Imelda Marcos, 62, returns to Philippines after spending 6 years in exile;
5. The body of British newspaper tycoon Robert Maxwell picked out from the Atlantic; Kiichi Miyazawa, 72, takes over as the new Prime Minister of Japan; the world's first test-tube-tiger born in Henry Doorly zoo in Omaha, U.S.
6. SAARC summit postponed; 3000 feared killed in Philippines typhoon.
8. The Russian President Boris Yeltsin declares a state of emergency and imposes curfew in the small republic of Checheno-Ingusheta in the Caucasus; A 35-year old Indian Dr. Ashok Kumar elected to the British House of Commons.
11. President Boris Yeltsin's decree imposing emergency on Checheno-Ingushetia disapproved in Russian legislature.
12. In the UN, Soviets back Pak-proposal to establish a nuclear-free zone in South Asia.
15. Seven of the 12 Soviet republics agree on a new political union, but Ukraine refuses to join them; Libyan agents indicted for Pan Am bombing at Lockerbre, Scotland, killing 170 people.
18. British hostage Terry Waite and US College Professor Thomas Sutherland freed in Lebanon; Gustav Husak, 78, who led Czechoslovakia during two decades of Communist orthodoxy after the Prague Spring reforms of 1968 dies.
19. Edward Shevarnadze recalled to be appointed as Minister for Foreign Relations.
20. Cambodia's ruling party and government restores Prince Norodom Sihanuk as the Country's head of state until elections are held in 1993.
22. Egyptian Deputy Prime Minister, Dr. Boutros Ghali elected new UN Secretary-General.
26. Rahmon Nabieyev, a communist hard-liner, wins in Tadzhikistan's first Pluralist presidential election; Opposition leader Nguza Karl-I Band appointed as Zaire's new Prime Minister; The US hands over its largest overseas airbase to the Philippines ending its 90-year old military presence there.
27. Israeli government agrees to attend West Asia bilateral peace talks in Washington; Khieu Samphan, leader of the Khmer Rouge, attacked in Phrom Penh by demonstrating public.
29. The G-15 Summit at Caracas decides to hold the 3rd Summit in Senegal in 1992 and the 4th in New Delhi in 1993; Prime Minister Joseph Coffigo deposed by the army in Togo; Kirghistan P.M. Nassirdin Issanor, 43, killed in accident.
30. Pakistan stops public executions till 1992 when the Supreme Court takes a final decision.

December

2. Ukraine referendum overwhelmingly endorses declaration of independence from Moscow.

3. Renegade troops in Togo captures interim Prime Minister Joseph Kokou Koffigoh after an assault on his official residence in the capital Lome; Russia recognises Ukraine as a nation; Hafez Al-Assad reelected to a fourth seven year term as Syrian President. Journalist Terry Anderson, the last American and the longest-held hostage in Lebanon freed after nearly seven years-2454 days-in captivity.

5. Israel frees a number of Lebanese detaintees from prison.

6. President Gorbachev sacks Soviet army Chief Vladimir Lobov and replaces him by General Samasonov; U.S. sanctions on Yugoslavia, shelling kills 80 in the Adriatic port of Dubrovnik.

7. Russia's Parliament abolishes death sentence for foreign currency speculators and scraps regulations under which private enterprise was illegal.

9. Leaders of Russia, Ukraine and Byelorussia sign an agreement to form a Commonwealth of independent states.

10. Israelies and Arabs open the second stage of peace parleys in Washington; Ms. Aung San Suu Kyi's family receives the Nobel Peace Prize in Oslo in her absence due to confinement in Myanmur.

11. European Community heads of government sign a treaty on political union.

INDIA

January

1. Karnataka governor Bhanu Pratap Singh resigns. Goa governor Khurshid Alam Khan appointed in his place; Khan to hold charge in Goa too.

2. Thiruvananthapuram airport declared India's fifth International Airport; P. Shivshankar resigns as Opposition Leader in Rajya Sabha.

4. Law Minister Dr. Subramaniam Swamy tenders apology to the Speaker for threatening to arrest him; Justice J.C. Shah (84) who enquired into the attrocities during the Emergency, dies in Bombay.

11. Five Janata Dal Ministers at the Centre disqualified by Speaker Rabi Ray on the basis of anti-defection law.

12. Five disqualified central Ministers resign but asked to continue in office by Prime Minister Chandra Sekhar; Akali Dal factions merge to become Siromani Akali Dal under the leadership of Simranjit Singh Mann; Air India decides to fly evacuation planes to the Gulf without insurance coverage.

13. Women will be recruited to the army, announces army chief Gen. S.F. Rodrigues.

24. P. Padmarajan (46), noted Malayalam film director, dies.

25. Morarji Desai awarded 'Bharat Ratna'; Ravi Naik of Maharashtra Gomanthak party sworn in as the Chief Minister of Goa; Sharad Pawar expands Maharashtra cabinet by inducting 11 new faces.

28. Furore over Union government's consent for US war palnes refuelling in India.

29. L.L. Singhvi appointed India's High Commissioner in London.

30. Union Government dismisses Karunanidhi government. President's rule imposed in Tamil nadu; Left Democratic Front sweeps District Council polls in Kerala.

February

6. Bandh in protest against the imposition of President's rule in Tamil nadu.

9. India stages the last decadal census of the century.

13. Muslim League leaves the Unitied Democratic Front in Kerala; Surjit Singh Barnala resigns as Governor of Tamil nadu.

16. Congress gives ultimatum to Chandrasekhar government to stop supplying fuel to US war planes.

17. Prime Minister Chandrasekhar declares that fuel supply to US war planes will be stopped forthwith.

20. Devilal moots national government for stability.

21. Opposition boycotts the President's address as a protest against the dismissal of Tamil Nadu government; the President accepts the resignation of 5 cabinet members who were disqualified by the Speaker as per the anti-defection law; film actress Nutan; 56, dies of cancer.

March

4. Finance Minister Yashwant Sinha presents midterm budget cut in food and fertiliser subsidy amounting to Rs. 934 crore proposed.

5. Congress threatens to withdraw support to the minority government of Chandrasekhar on the issue of police surveillance in Rajiv Gandhi's residence.

6. Chandrasekhar resigns as Prime Minister, following Congress (I) adopting a policy of non-co-operation.

7. Mrs. Nahida Imtiza, daughter of National Conference M.P. Saifuddin Soz, released after 8 days in captivity by militants in Jammu and Kashmir in exchange for 5 militants who were in custody.

12. Lok Sabha Speaker Rabi Ray admits an Opposition-sponsored motion for removal of the Supreme Court Judge, Mr. V. Ramaswamy, for alleged misappropriation of public funds, and sets up a three-Judge committee to investigate.

13. President R. Venkataraman dissolves Lok Sabha.
14. Mohammed Shafi Quereshi (Bihar), Bhanu Prakash Singh (Goa, Daman, Diu, Dadra, Nagar Haveli) and Loknath Mishra (Assam) appointed governors.
15. G. Aravindan, noted film director, dies at the age of 55.
18. West Bengal opts for assembly poll.
20. Simultaneous polls in Tamil Nadu; Surendra Nath Dwivedi appointed the Governor of Arunachal Pradesh.
22. Chautala sworn in Haryana Chief Minister; President withholds assent to the pension bill of Members of Parliament.
25. 1991 census report released; India has 844 million people; 28 I.A.F. men die in air crash in Bangalore; the first Indian baby conceived through egg donation technique in Norway.
26. Chautala loses majority after the disqualification of three Janata Dal (S) members of the assembly under the anti-defection law; Janata Party merges with Janata Dal (S).
27. Chautala recommends Assembly dissolution.
28. Chautala asked by the State Governor to prove his majority on the floor of the house.
29. Haryana Governor sets April 3 deadline for proving majority of Chautala government.
31. West Bengal Assembly dissolved to pave way for elections.

April

2. Haryana Governor recommends President's rule;
3. Asom Gana Parishad splits; Bihar Governor turns down three ordinances.
4. Uttar Pradesh Assembly dissolved to pave way for Assembly polls along with Lok Sabha elections; Gujarat Chief Minister Chimanbhai Patel launches a new regional party-Janata Dal (Gujarat)-to contest the elections with poll understanding with Congress (I).
5. Union cabinet endorses Haryana Governor's recommendation calling for President's rule in Haryana; Kerala Assembly dissolved paving way for simultaneous elections.
6. President's rule imposed in Haryana.
8. Simultaneous polls in Kerala announced; Assam Chief Minister Prafulla Kumar Mahanta steps down as Party Chief.
12. Lok Sabha elections to be held on May 20, 23, 26; Punjab Assam, J and K polls deferred.
13. Arun Nehru and Arif Mohammed Khan quit party posts in protest against the "queer" policies of leadership including that of V.P. Singh.
14. National Front promises 5-10% jobs to economically backward sections among the upper castes.
15. BJP leaders Advani and Joshi court arrest on election issue.
18. President issues poll notification for Assam and Punjab excluding J. and K.; DMK and Janata Dal reach poll accord; Kerala declared the first fully literate state in the country. Election Commission agrees to the Centre's suggestion to change the poll dates in Assam and Punjab.
21. Election Commission rejects Congress, CPM plea on postponement of polls in Punjab; Jan Morcha reactivated.
22. Arun Nehru and Arif Mohammed Khan expelled from Janata Dal; IMF and the World Bank decide to grant $ 1 billion loan to India.
23. Badal breaks away from Akali Dal (Mann); Another Shiv Sena MLA's election set aside by the Bombay High Court; Major parties agree to have poll in Punjab.
24. Election announced for Assam on June 6 and Punjab on June 22.
25. Sprint Queen P.T. Usha get married to CISF officer Sreenivasan.
27. Canada raises its visa fee to Rs. 850/-.
29. Indian Orthodox Church gets a new head. when Basalios Mar Thoma Mathews II is consecrated as Catholicos at Kottayam.
30. BJP election manifesto promises Presidential form of government.

May

6. Former Foreign Secretary A.P. Venkateswaran removed from the post of Chairman, IIM, Ahmedabad.
9. The police and the militants engage in 48-hour gun battle in Punjab.
10. Sunny Deol wins the Filmfare award for the best actor and Madhuri Dixit for the best actress.
11. Naxalities in Andhra abduct P. Sudhir Kumar, son of the former Union Minister Shiv

Shankar.

13. Naxals release P. Sudhir Kumar, son of former Union Minister P. Shivshankar in exchange for a few Naxals in jail.

19. About 20 crore of voters go to the polling booths in the first phase of election in 204 constituencies of the 10th Lok Sabha; Three Indians – Baba Amte, Biplab Bhyhan Basu and M.K. Ranjit Singh win the Global 500 award for environment protection.

21. Former Prime Minister Rajiv Gandhi killed in a bomb blast at Sri Perumbudur (40 km from Madras) at 10.20 p.m.

22. In view of Rajiv Gandhi's assassination elections scheduled to be held on 23, 26 deferred to 12, 15 of June; Veteran Communist leader Shripat Amrit Dange is dead; Sonia unanimously elected Congress President by the Working Committee.

23. Sonia Gandhi declines to be the Congress (I) President.

24. Rajiv Gandhi's body cremated; Rahul Gandhi lit the funeral pyre.

27. A 40-year old woman arrested from Kadalundi in connection with Rajiv Gandhi murder; Justice J.S. Verma of the Supreme Court appointed to probe into the Rajiv murder case.

29. P.V. Narasimha Rao unanimously elected President of Congress (I).

30. Uma Shankar Dixit, veteran Congress leader, dies at 90.

June

2. Dinesh Goswami, former Union Law Minister, killed in a road accident in Assam.

9. Question paper leaked: Civil Services preliminary examination cancelled.

11. Over 106.6 million voters go to the second phase of national polls.

13. Doordarshan Director General Shiv Sharma shot at in Delhi by suspected Punjab terrorists.

14. The entire Punjab declared "disturbed area" and army deployed.

15. About 50% of the 180.3 million electorate cast their votes in the final phase of Lok Sabha elections.

16. Reserve Bank of India announces foreign currency deposit scheme.

17. Congress wins absolute majority in Haryana assembly; the late Rajiv Gandhi and Sardar Vallabhbai Patel awarded Bharat Ratna; Congress and its allies secure absolute majority in Kerala and Tamilnadu assemblies.

18. Congress emerges as the largest party in Lok Sabha polls though short of an absolute majority.

19. Mrs. Mrinal Gore resigns the Presidentship of Maharashtra Janata Dal on account of the party's rout in the Lok Sabha elections; Dramatist K.V. Subbanna wins Magsaysay award.

20. The tenth Lok Sabha constituted; Goa cabinet expanded with the induction of four more Ministers; In Assam Congress heading towards two third majority; Narasimha Rao elected Congress Parliamentary Party Leader.

21. A 54-member Narasimha Rao ministry sworn in.

22. DMK President M. Karunanidhi resigns from the Tamil Nadu assembly.

23. Union cabinet formed – Chavan gets home and Man Mohan Singh Finance; Mohan Dharia resigns from the Planning Commission.

24. The first-ever BJP ministry led by Kalyan Singh takes over in UP; Jayalalitha ministry sworn in in Tamil Nadu; K. Karunakaran ministry assumes power in Kerala; Pranab Mukherjee appointed Dy. Chairman of the Planning Commission; Two LIC officers burnt to death in Kashmir.

25. Sudhakar Rao Naik sworn in as the Maharashtra Congress Chief Minister.

26. Sharad Pawar joins Union Cabinet as Defence Minister.

27. An Israeli tourist, Eviz Khala, killed by a terrorist in Srinagar.

28. K. Doraiswamy, a senior executive of the Indian Oil Corporation kidnapped by Kashmir ultras.

29. A 32-member Left Front cabinet led by Jyoti Basu sworn in in West Bengal.

30. A 36-member Congress ministry led by Hiteswar Saikia assumes office in Assam.

July

1. Rupee devalued by 8.5%.

3. Rupee devalued by 10.58 – 10.96% for the second time in 3 days.

6. Sonia Gandhi accepts Bharat Ratna from the President on behalf of her late husband Rajiv Gandhi.

8. BJP leader L.K. Advani recognised as the leader of the Opposition in the 10th Lok Sabha; 25 tonnes of gold moved to London from India to raise $ 200 million loan.

10. Shivraj Patil of Congress elected Speaker of 10th Lok Sabha.

12. President confers Bharat Ratna on Sardar Vallabhai Patel.

15. The 25- days old Narasimha Rao government wins a vote of confidence in Lok Sabha with 241 votes for and 111 against while 112 members abstained.

16. Railway budget: Passenger fares hiked 15–20% and freight up by 10%.

18. The government admits to fresh gold transfer to the Bank of England to raise short term loans.

19. K.V. Subbana, an Indian playwright wins Magsaysay award for journalism, literature and creative communication arts.

20. Fall in industrial growth hinted by 1990–91 annual economic survey; Shanmugam, suspect in Rajiv murder case, found dead; Sree Chithira Thirunal Balarama Varma, former Maharaja of Travancore dies at the age of 78.

21. Ajit Singh dropped as Secretary General of the Janata Dal.

22. New industrial policy for liberalisation of economies announced in Parliament.

24. Union budget imposes all-round price hike; New Industrial Policy announced – licensing scrapped.

25. Sudhakarrao Naik sworn in as Maharashtra Chief Minister.

26. Tamilnadu and Karnataka observe bandh over Cauvery water issue.

27. Army called out in Srinagar valley after an attack on security forces as 17 persons killed.

29. Union Labour Minister Vazhappadi K. Ramamurthy resigns on account of differences on Cauvery water issue.

31. Air Chief Marshal N.C. Suri appointed Chief of Staff in place of Air Chief Marshal S.K. Mehra who retired.

August

1. In Maharashtra, ruling Congress (I) achieve absolute majority in the assembly when 9 MLAs who had split from the Janata Dal join the Congress-I.

2. Budget provision to donate Rs.100 crore to Rajiv Gandhi Foundation withdrawn.

3. About 280 kgs of gold ornaments valued at $ 15 million which had been deposited in the Portuguese bank in Goa by Goans flown back to India.

6. Fertilizer price hike cut; Ramakrishna Hegde disqualified as M.L.A.

7. India successfully launches Prithvi-3 ground-to-air missile from Sriharikota.

8. India and Soviet Union extend their treaty of peace, friendship and co-operation for 20 more years.

10. Delhi airport police foils an attempt by a 50-year old Saudi national to smuggle out a minor girl named Ameena.

12. Parliament passes the Terrorist and Disruptive Activities (prevention) amendment bill.

13. S. Mallikarjuniah of BJP elected Dy. Speaker of the Lok Sabha.

16. A Boeing 737 Indian Airliner crashes in Manipur's Churachandpur district killing all the 69 persons; C. Achuta Menon, former Chief Minister of Kerala passes away.

17. Planning Commission fully reconstituted.

18. 12 LTTE militants commit suicide.

20. Sivarasan & Subha, main suspects in Rajiv Gandhi case, commit suicide in Bangalore; India Oil Executive Director, K. Doraiswamy, released after 52 days in the custody of Kashmir ultras; India's Ambassador to Romania, J.F. Ribeiro, shot at and seriously wounded by Sikh extremists in Bucharest.

21. Nashik in Maharashtra witnesses once-in-twelve years Kumbh Mela.

24. Razia Ismail of India elected president of World Alliance of YWCAs.

September

8. Hostage ONGC Engineer T.S. Raju and mediator Bipul Mahanta, an Amesty International member, killed by ULFA in Assam.

9. Gold ornaments pledged by Goans to the Portugese bank returned to the owners.

10. Lok Sabha passes unanimously the Places of Worship (special provisions bill) for maintaining the status quo of religious places as on 1947.

11. The government announces tax conces-

sions; Supreme Court sentences 6 Gujarati police officials for arresting and handcuffing Mr.N.L. Patel, Magistrate of Nadiad.

12. The Parliament approves the Places of Worship (Special Provisions) bill 1991 which provides for the maintenance of status quo of all places of worship as on August 1947, except the Ram Janmabhoomi temple in Ayodhya.

13. The former Goa Chief Minister, Churchil Alemao who was wanted under COFEPOSA, surrenders to the police in Panaji.

14. Assam declared 'disturbed area', army launches 'Operation Rhino' against ULFA militants.

16. The Lok Sabha passes bill for providing for the cancellation of General election in Punjab.

19. The Planning Commission sets 5.6 percent growth rate in the 8th Five Year Plan; Vajpayee appointed PAC Chairman; ULFA kills kidnapped ONGC official.

20. The Aid India Consortium pledges $6.7 billion aid for India.

22. Padma Sree Award winner film actress Durga Khote (86) dies.

26. Anti-quota stir: three, varsities in Delhi closed.

27. The Government promulgates an ordinance to amend MRTP Act and the Companies Act, totally removing pre-entry restrictions on new industrial houses and expansion of the existing ones.

28. Shankar Guha Niyogi, an active trade union leader in Raipur, Bhilai,Durg and Bilaspur districts of Madhya Pradesh shot dead by unknown assailants; Air India hikes all international fares by 10% from October 1st.

October

5. Ramnath Goenka (87), founder Chairman of the Indian Express, passes away.

7. Telugu Desam decides not to oppose Prime Minister Narasimha Rao in Nandyal.

8. Meghalaya Chief Minister, B.B. Lyngdoh, loses a vote of confidence in the assembly.

9. Romanian diplomat in Delhi, Liviu Radu, kidnapped by Sikh ultras.

11. The BJP government in U.P. acquires a vast expanse of land in the Ramkote locality in Ayodhya on which the disputed shrines stand; Ram Narayan Dubey, Resident Editor of Nagpur Times, shot dead by a police Inspector on personal animosity; Meghalaya placed under President's rule.

12. Sonia Gandhi declines to contest from Amethi.

13. Captian Satish Sharma nominated to contest from Amethi Lok Sabha constituency; Prime Minister Narasimha Rao leaves for Harare to attend the 50-nation commonwealth heads of government meeting; Film star Shatrughan Sinha decides to contest New Delhi Lok Sabha seat in BJP ticket against Rajesh Khanna, the Congress nominee.

17. Fiftyfive people killed in two bomb explosions in a Ramlila function at Rudrapur in Nainital district.

18. Army rescues the former J and K Tourism Minister, Mrs. Khemlath Wakhloo and her husband Dr. O.N. Wakhloo from their captors in Baramulla in Kashmir valley.

20. Abolut 1000 people perish in an earthquake that rocked large areas of northern India, especially the three northern districts of UP.

24. Ismat Chughai (80), Urdu writer and campaigner for justice for women, dies.

25. The special bench of Allahabad High Court allows the UP government to take possession of land acquired by it around the Ram Janbhoomi–Babri Masjid site in Ayodhya but bans it from putting up any permanent structure.

28. Chruchill Alemao, former Chief Minister of Goa who was detained under COFEPOSA, set free by court.

29. Janata Dal leaders inculdiing V.P. Singh arrested on way to ayodhya.

31. Kar Sevaks hoist flags on Masjid in Ayodhya; 36 killed in Bangalore train accident; Government announces that it has redeemed the entire 46.9 tonnes of gold pledged to the Bank of England and the Bank of Japan during the severe balance of payment crisis in July.

November

1. J.N. Dixit, India's High Commissioner in Pakistan, selected to be next Foreign Secretary; The foreign postal rates for all countries except Bhutan, Nepal and Bangladesh re-

vised.

2. Yogesh Deveshwar, a top executive of ITC, appointed CMD of Air India.

3. India's short range surface-to-air missile (SAM) named Trishul successfully tested.

4. Mr. Rikhi Jaipal (75), former permanent representative of India to the U.N. dies.

8. K.P.S. Gill reappointed Director General of Police in Punjab; liquor tragedy toll in the capital rises to 160.

10. Indian Navy intercepts a Sir Lankan Tamil militant's ship carrying arms.

11. Supreme Court declares the anti-defection law as constitutional but holds that decisions of Presiding Officers under the law could be subjected to judicial review.

13. Guntu Santhan, one of the key LTTE militants accused in Rajiv Gandhi murder case, commits suicide in Tiruchi; Supreme Court orders establishment of an all-India judicial service.

14. The 7th International Childrens Film Festival opens in Thiruvananthapuram' Mr. Justice K.N. Singh appointed Chief Justice of India.

15. Import curbs on capital goods relaxed; Insurance official Dr. S.L. Khosa freed in Kashmir in exchange for a militant.

16. Sixty percent of the 23 million voters exercise their franchise in the by-elections to 15 Lok Sahba and 56 Assembly seats in 14 states.

17. Prime Minister P.V. narasimha Rao wins by-election in Nandyal with a record margin of 5,80,297 votes; Sharad Pawar wins in Baramati; Ms. Medha Patkar, leader of the Narmada Bachao Andholan, arrested by Maharashtra police.

18. By-elections: Congress gets 8 Lok Sabha seats; suffers rout in UP assembly while BJP gets absolute majority.

19. Two national commissions on women set up to assess the condition of women in the country. Ms. Medha Patkar, leader of the Narmada Bachao Andholan, released unconditionally from Dhule jail, Maharashtra.

21. Former Tamil Nadu Home Secretary R. Nagarajan arrested for aiding, abetting and harbouring LTTE militants; LIC decides to launch policies in Europe in association with 'Sun Life' of Britain.

22. The Supreme Court declares the Karnataka ordinance on Cauvery water dispute unconstitutional; Fifty roasted alive when a chemical tanker overturned and caught fire on the Bombay-Ahmedabad highway.

23. India decides to upgrade the ties with the Soviet Republics; The Australian film, 'Holidays with Silvester' wins the Golden Elephant Award for the Best Feature film at the International Childrens film festival of India at Thiruvananthapuram.

24. Bihar's ruling Janata Dal makes a clean sweep of all the three Lok Sabha seats in the by-elections.

26. Romanian diplomat Liviu Radu released by Sikh militants after 48 days in captivity.

29. Partial response to nation-wide industrial and bank strike called by the left-oriented trade unions and confederation to oppose the new industrial and economic policies of the government.

December

1. Stone laid for the Sanskrit University at Kaladi, the birth place of Adi Sankara; Bomb found in Air India Jumbo minutes before it was to fly to New York.

2. Balvinder Singh Nigah, an employee of the catering firm Chef Air, arrested for planting a bomb in Air India jumbo 'Emperor Ashoka'.

3. Satinder Kumar Lamba appointed India's Ambassador to Pakistan; An all-party delegation from Tamil Nadu led by Chief Minister Jayalalita urges the Prime Minister to gazette the interim award on Cauvery.

4. The Lok Sabha approves a vital bill seeking to bring sick public sector units within the purview of the Board for Industrial Finance and Reconstruction; Eminent Bengali novelist Bimal Mitra, 79, dies.

5. Sarkaria Report accepted: Delhi to continue to be a Union Territory while having a Legislative Assembly and a Council of Ministers; In UP 56 Janata Dal MLA's belonging to V.P. Singh faction elect a new leader; The government reduces visa fees for tourists intending to visit India.

13. Justice M. H/ Kania of Maharashtra sworn in as the 23rd Chief Justice of India.

SPORTS

January

4. Kerala Police retains the Football Federation cup by beating Mahindras, Bombay (2-0) in Kannur; India retains Asia Cricket cup, Kapil Dev wins a hatrick.

6. World Aquatic champioships open in Perth, Australia.

8. Norber Rodsa creates a new world record in 10m breast-stroke in the World Acquatic meet in Perth.

9. Tamas Darney breaks own world record in 40m individual medlay in the World Acquatic meet in Perth; Jagbir Singh of Indian Airlines chosen to lead India in the 5th International Hockey Tournament for Indira Gandhi Memorial Gold Cup.

11. Soviet Union beats Zambia in the opening match of the 9th Nehru Cup International Football meet at Thiruvananthapuram; Ben Johnson loses his lustre when he was beaten to the 2nd place in the 50m run in Hamilton after two years of ban from competition since Seoul olympics; Olympian Andrean Moorhous beaten by Hungary's Norbert Rodsa in the 100m breast stroke in the World Aquatic Meet at Perth.

12. China's Olympic star-Gao Min wins his second gold in springboard diving in the World Aquatic Meet in Perth.

13. Romania beats India 3-0 in the Nehru Cup Football at Trivandrum.

14. Hungary's Tomas Darney breaks world record in 200m individual medley in the World Aquatic Meet in Perth.

15. Australia wins world series cricket cup when they beat New Zealand for the second time in Melbourne.

16. George Thomas of Railways wins National Badminton crown when he defeats Pravin Kumar (15-3, 15-12) in Hyderabad.

21. Soviet Union wins Indira Gandhi Gold Cup Hockey in New Delhi.

22. China beats India 1-0 in the Nehru Cup Football in Trivandrum. India gets 3rd place in the Indira Gandhi Gold Cup Hockey.

23. India's Viswanathan Anand beats Soviet Grandmaster Alexi Dreev in the opening qualifying match of the world Chess championship in Madras.

24. India beaten by Soviet Union (1-3) in the last league match of the Nehru cup International hockey in Trivandrum.

25. Leander Paes wins Four Square Masters Satellite tennis championship by beating Italy's Masimo Valory at Indore.

27. Romania wins the Nehru Cup hockey by beating Hungary by 3-1; Boris Becker and Monica Seles emerge champions in the Australian Open Tennis by beating Ivan Lendl and Jana Novotna.

29. Australia beats England to win Ashes; North zone annexes Duleep Trophy in Interzonal cricket.

30. Dibiendu Barua becomes India's second Chess Grandmaster after V. Anand.

February

1. The Supreme Court appoints Justice K. Natarajan of the Madras High Court as Administrator of the Indian Olympic Association.

3. Gabriela Sabatini wins Pan Pacific open women's Tennis championship.

4. Sprint Queen P.T. Usha announces her engagement to CISF Circle Inspector V. Srinivasan working in Rourkela.

8. Leander Paes and S. Vasudevan win the single ties against Thailand in the Davis Cup Tennis Asia-Oceanic Group-1.

9. Leander Paes and Sesan Ali win the doubles tie against Thailand in the Davis Cup Tennis Asia-Oceania Group-1.

10. Leander Paes and S. Vasudevan win the reverse singles in the Davis Cup Tennis Asia-Oceania Group I to clinch a 5-0 victory.

11. Sergi Bubka of Soviet Union betters his own Pole Vault world record to 6.08 metres; Utha Pipping of Germany creates her world record in 5000 metres in Stuttgart (15:13.72).

13. Maharashtra's Pushpalata Mangal wins the 17th National Chess cahmpioship at Kozhikode.
15. Santosh Trophy football in Palakkad; Madhya Pradesh beats U.P. 3-0 in the opening match.
18. Martina Navratilova wins the Virginia Slims Women's Tennis crown for the 11th time by beating Sina Garrison (6-1, 6-2).
19. JCT Mills wins the Nizam Gold Cup football by beating Tata Football Akademy (1-0).
23. Viswanathan Anand beats Gata Kamsky of the United States in the preliminary round of the Linares International chess tournament.
26. Ben Johnson rediscovers his explosive start to earn victory in the 6 meter sprint at the Budapest indoor interantional meet.
28. Gaurav Kapoor of Bombay University creates new national record of 1:3.48 in 100 mtr butterfly in the all India inter-university swimming in Trivandrum.

March

1. Kerala University wins overall crown in the inter-university swimming at Trivandrum.
10. Maharashtra wins Santosh Trophy Football beating Kerala by a solitary goal by Santhakumar.
11. Kerala wins overall champioship in the Inter State Athletic Meet in Gandhinagar by 111 points.
25. Matu Gush wins the women's crown by beating B. Bhuvaneswari and Kamelsh Mehta wins men's singles for the 6th time by beating. S. Raman in the national T.T. champioships in Jaipur.
31. Artirp Barrios of Mexico sets a world record by covering 21.101 kms in a one hour run.

April

1. Steffi Graf wins U.S. women's hard count Tennis championship for the 3rd time beating Monica Seles in San Antonio.
2. Soccer Star Diego Maradona, suspended from every sporting activity by the Italian league after failing a dope test.
7. Bill Ponford, former Australian Test Cricketer, who twice scored over 400 in first class matches, dies at the age of 90.
9. Ivan Lendl of Czechoslovakia beat Ramesh Krishnan to enter the men's singles third round of the 1.15 million dollar Japan Open tennis tournament in Tokyo.
14. Stefan Edberg beat Ivan Lendl to retain the men's singles title at the 1.15 million dollar Japan Open tennis tournament in Tokyo.
15. Gabriela Sabatini beats Steffi Graf in the 350000-dollar Bausch and Lomb tennis champioships in Amelia Island, Florida; Ibrahim Hussein of Kenya wins the Boston Marathon for the second time in 3 years beating Ethiopia's Abie Mekonnen, the 1989 winner.
16. International Olympic Committee decides to increase the number of women's team events in the Atlanta Games.
18. Six new national records in the 34th big bore National Shooting championships in Indore.
25. Track Queen P.T. Usha gets married to Sreenivasan.
26. Diego Maradonna, one of the world's best known soccer stars arrested on suspicion of possessing drugs in Buenos Aires. Abahani of Dhaka beats Bank of India, Bombay 4-0 in the opening match of Nagji Football at Kozhikode.
29. FIFA clamps down Maradona with a ban for 15 months for keeping drugs.
30. Sweden retains men's crown in the world T.T. at Cheeba, Japan; combined Korea becomes women champion; Olympian Mark Spits beaten to second place by Mat Biondi in 50m butterfly in California.

May

1. The Marylebone Cricket Club, the game's oldest institution, shut its doors on proposal to allow women into the all-male club for the first time.
6. Deng Yaping of China becomes the women's Singles champion of world T.T. at Chiba, Japan. This is the 7th successive win for China.
8. India enters the qualifying round of Davis cup Tennis by beating S. Korea (3-2).
11. Ashwini Nanchappa wins a double when she won the 200 & 400 metres in the 30th

Open national athletic meet in Calcutta.

12. China wins both the men and women badminton crown in Copenhagen; Ashwini Nachappa wins four golds in the National Open Meet at Calcutta in 100, 200, 400 and 4 x 100 mtrs. relay.

13. Railways win the overall championship in the 30th National Open Athletic Meet in Calcutta by 207 points; Gabriela Sabatini wins Italian Open womens tennis crown by beating Monica Seles (6-3, 6-2).

16. Manchester United wins European Cup football for the first time in 23 years by beating Barcelona (2-1) in Rotterdam.

24. Angered at the rejection of its bid to stage the 100th anniversary of the modern games revived in Athens in 1896, Greece announces that it would boycott festivities of the 100th birthday, though it would take part in the meet.

25. Ben Johnson finishes 5th in his first 100 mtrs race since tested positive for doping at 1988 Seoul Olympics.

June

1. World champion Holland beats India 3-1 in the first Hockey test in Amstelvein.

5. Jim Courer Roland wins French Open Tennis beating Andre Agassi 3-6, 6-4, 2-6, 6-1, 6-4.

8. Monica Seles retains her French Open Tennis Crown and keeps her world's number one ranking by beating Arantxa Sanchez-Vicario of Spain.

10. For the 11th time Soviet Union's Sergi Bubka betters his own world Polevault record to 6.08 m.

15. Carl Lewis wins the men's long jump to preserve a 10-year winning streak in the U.S. national athletics in New York; Leroy Burrel smashes world 100 mtr record in 9.90 seconds beating compatriot Carl Lewis.

16. Nagano in Japan selected to stage the 1998 Winter Olympics; Stefan Edberg wins his first Queens Club Tennis title beating American David Wheaton by 6-2, 6-3; the international Olympic Committee accepts Namibia into the Olympic fold.

17. India retains the team as well as individual honours at the USIC World Railways tennis champioships in Prague.

21. Topseed Monica Seles withdraws from the Wimbledon tennis in the name of an injury.

24. Former world No. 1 Mats Wilander of Sweden pulls out of the Wimbledon Tennis champioship because of an injury.

25. Three world records shattered in the 10th world women's Powerlifting in New Delhi.

July

2. John McEnroe, winner of the Wimbledon crown in 1981, 83 & 84 fined 10,000 dollars for abusing a line-Judge.

3. Martina Navaratilova's attempt at a 10th Wimbledon title thwarted by a woman 19-year her junior, J. Capriati (6-4, 7-5).

6. Steffi Graf regains the Wimbledon women's singles crown by beating Argentina's Gabriela Sabatini.

7. Michael Stich of Germany wins Wimbledon men's singles crown by beating Boris Becker.

9. South Africa admitted to the International Olympic movement and the Cricket fraternity ending 21-year cricketing boycott of the country; Leroy Burrell & Marlene Otty win 100 metres races in the Lousanne Grand prix.

23. Iwai Niyako wins the women's Marathon at the world university games in Scheffield.

25. India's Sumita Laha sets a new world record in the 75 kg category of the world powerlifting championship in Delih.

28. Spain beats US to win its first Federation Cup Women's Tennis tournament in Nottingham.

August

3. India regains the Sultan Azlam Shah Hockey trophy in Ipoh, Malaysia.

5. Fourth seed Jennifer Capriati beat top seed Monica Seles in the final of the $ 225,000 Mazda tennis classic in Carlsbad, California; Sergei Bubka breaks his own Polevault record in an international meet at Malmo, Sweden; Leroy Burrell beat Carl Lewis in 100 mtrs; the Indian hockey federation announces an award of Rs. 1 lakh for the Indian hockey team which won the Sultan Azlan Shah cup.

7. 16 world records set at the Zurich Grand

Prize athletics.

10. Snake boat 'Champakkulam', captained by M.K. Lalason and owned by UBC Kainakary wins the Nehru Trophy boat race held in Alapuzha.

17. The International Tennis Federation bans women's world No. 1 Monica Seles from competing the 1992 Barcelona Olympics.

19. Monica Seles beat Kimiko Date in the final of the Virginia Slims Tennis Tournament but loses her No. 1 ranking.

21. American Mike Powell breaks the oldest individual world record in longjump when he betters the 8.90 meters of 1968.

24. Carl Lewis of U.S. wins the 100 meters gold in a world record time of 9.86 seconds in the 3rd world track & field championship in Tokyo.

26. Germany's Katrin Krabbe wins in the women's 100 meter gold in the Tokyo track & field meet.

28. Monica Seles named WTA player of the year.

31. Hassiba Boulmerka of Algeria and Moses Kiptanu of Kenya strike gold in 1500 metres and 3000 metre steeple chase respectively in the World Athletics championships in Tokyo.

September

1. Carl Lewis anchors U.S. to world mark in 4 x 100 meters relay in the third World Athletic meet in Tokyo.

4. Billy Konchellah, R. Kibet and W. Kirochi make a Kenyan medal sweep in the men's 800 metres in the Permit Athletic Meet in New Delhi.

6. Russian leader Boris Yeltsin announces that in spite of political divisions, an all-Soviet team would take part in Barcelona olympics.

7. Monica Seles beat Martina Navratilova to claim her third Grand slam title in U.S. Open tennis.

8. India's Lender Paes bags the U.S. Tennis Open Junior singles; Sweden's Stefan Edberg beats America's Jim Courier to gain his maiden U.S. Open.

12. Indian Railways beat Air India Bombay (3-0) to win the Federation cup hockey in its inaugural year.

13. Kim Zmeskal becomes the first American ever to win a medal in the World Gymnastics championships in Indianopolis, when she struck gold in women's all-round floor exercises.

16. FIFA announces a record entry of 133 countries for the 1994 world cup.

22. Indian Olympic Association President B.S. Adityan elected Vice President of the Olympic Council of Asia; Monica Seles of Yugoslavia captures her 17th title when she wins the Nichirei International Tennis Tournament in Tokyo.

24. Sprinter Frankie Fredericks gives Namibia its first gold medal at the All Africa Games when he won the 100 meters final.

30. Yugoslav Monica Seles wins the Nokia Masters Womens Tennis Tournament in Essen, Germany.

October

3. Poonam Taneja and K.K. Geetha set national records in 10,000 meters and heptathlon respectively in Escorts Masters Meet in New Delhi.

12. Maria Irudayam wins the men's single and double titles in the inaugural world Carrom championship in New Delhi.

13. Azharudeen selected to lead the Indian team for the Sharjah cricket tournament.

21. Kapil Dev attains 200 wickets in one day internationals; India qualifies for the Barcelona olympics hockey when they defeat USA (8-0); Molly Chacko wins the third Silver for India in the Asian Track & Field, Kualalumpur.

22. India's Shiny Wilson wins gold in 400 metres in the 9th Asian Track & Field meet in Kualalumpur; Shiv Sena activists damage the pitch at Wankhede stadium where India-Pakistan one day cricket international would have been played.

23. China finishes with 24 gold medals to clinch the top spot in the 9th Asian Track & Field championships in Kualalumpur.

27. Pakistan calls off cricket tour in India.

29. Bhagyashree Thipsay wins the Asian women's Chess championship in Bhopal.

November

1. India's international badminton player Prakash Padukone appointed Chairman of the Karnataka Sports Council.

2. Indian grandmaster Viswanathan Anand and U.S. champion Gata Kamsky create history by beating world champion Gary Kasparov and former world champion Anatoly Karpov respectively in the 12th round of the 15th annual Interpolis Chess tournament in Tilburg, Netherlands.

7. Mangalam Chinna Swamy (91), former President of the Board of Control for Cricket in India dies in Bangalore.

10. India defeats South Africa by three wickets in the first one day international cricket tournament in Calcutta.

11. Indian captain Mohammed Azharuddin placed among the world's top ten batsmen by Coopers Deloitte ratings.

12. Sebastian Xavier of Railways opens his gold hunt with a national record in the 100m breast stroke in the 47th Senior National Aquatic championship at Trissur; India clinch the one-day international series when it beat South Africa by 38 runs in their second match in Gwalior.

14. South Africa records their first victory in international cricket after 21 years of isolation when they beat India by 8 wickets in the third one-day international in New Delhi; Sebastian Xavier betters national record in 200 mtrs individual medley at the 47th Senior National Aquatic championship in Thrissur.

16. Sebastian Xavier breaks national record in 50 meters free style in the 47th Senior National Aquatic championship in Thrissur.

17. Monica Seles beat Jennifer Capriati to win the Virginia Slims of Philadelphia Tennis tournament (7-5, 6-1)–her ninth victory in 1991.

18. India defeated in the One-day international cricket at Perth, Australia.

19. Soviet Union defeats Asian Games champion South Korea (3-1) to win the 4th Indira Gandhi International women's Hockey tournament.

23. Geeth Sethi bags the Palm Beach world Master's billiards tournament in New Delhi.

24. West Indies beats Pakistan by 17 runs in the decisive third one-day international in Faizabad to clinch the three-match series 2-0.

25. Monica Seles beats Martina Navratilova to claim Virginia Slims tennis champioship (6-4, 6-3, 7-5, 6-0) and her 16th title this year and earning a record of $ 2457758 in 1991.

30. The U.S. snatches the inaugural FIFA Women's World Cup by beating Norway 2-1 in Guangzhou.

December

1. France wins the Davis Cup for the first time in 59 years by defeating the U.S.; Calicut University defeats Burdwan University to annex Sir Asuthosh Mukherjee shield in the inter-varsity football; European Champion the Soviet Union wins the 1991 World Cup mens vollyball tournament with a better set average after it tied with Cuba and the Unitied States in Tokyo; Former Philipines sprint queen Lydia de Vega-Mercado stages a come-back coup in the women's 100 metres at the 16th South East Asian Games when she won the gold in 11.44 seconds, short of her own games record of 11.28; Kerala University lifts the all-India Inter-university kabbadi title defeating Bharatidasan of Tamil Nadu 25-16.

2. Australia scores a 10-wicket victory over India in the first test in Brisbane; Pas club, Iran beat Mohun Began by a solitary goal to win the title in the DCM Football tournament in New Delhi.

4. Harisimran Singh Sandhu wins the senior skeet (ISU) title in the National shooting championship (skeet and trap) in New Delhi; The World Boxing Association strips Jamaica's Mike McCallum of his middle-weight title for breaking the WBA's rules.

6. The opening match between India and West Indies in the World Series Cup cricket in Perth, Australia ends in tie.

7. Carl Lewis, the double world record holding sprinter, wins the Jesse Owens Award, the highest in track and field.

8. India beats Australia by 107 runs in the second one-day match of the World Series Cup at Perth; In New York, the US sets the ball rolling for World Cup 1994 with a draw which mapped the features of 141 nations over the next two years. Germany's captain Lothar Mattheus voted World Player of the Year.

9. Railways win the Lady Ratan Tata Cup for the 13th time in a row by beating Bihar 1-0 in the 45th Senior National Women's Hockey.

SCIENCE & TECHNOLOGY

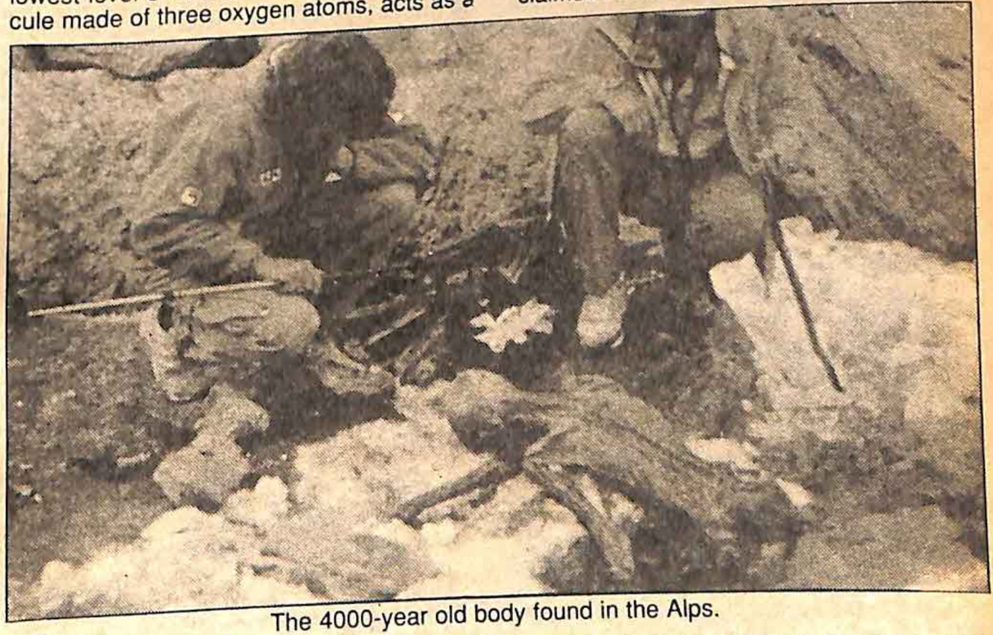
- An exceptionally well-preserved 4,000 year old body of a man was discovered in the Alps on the Italian-Austrian border. This is the best specimen of pre-historic man that has been discovered yet.

- The Magellan spacecraft orbiting Venus sent back radar images indicating that the earth's nearest neighbouring planet is continuously being remodelled by vast outpourings of volcanic lava similar to those that occurred on earth over 2 billion years ago.

- The amount of protective ozone in the atmosphere over Antaractica dipped to its lowest level ever recorded. Ozone, a molecule made of three oxygen atoms, acts as a shield against solar ultraviolet radiation which can raise the risk of cancer in humans and threaten food crops.

- The global effort to phase out chlorofluorocarbons (CFCs), a suspected ozone-depleting chemical, received a setback when research findings showed that one of the principal alternatives to CFC's causes tumours in male rats.

- A lava eruption that covered more than two hundred thousand square kilometers of Siberia could have caused climatic changes that led to the near-total extinction of animal life on earth some 250 million years ago, claimed American researchers.



The 4000-year old body found in the Alps.

■ A group of eight scientists-four men and four women-locked themselves inside a huge glass building that will be a world unto itself with its own "ocean", "rainforest", "farmland" and "atmosphere". During their two-year stay in such a "biosphere", the scientists will breathe recycled air, grow recycled food, drink recycled water and eat crops fertilized with their own recycled waste. The idea of the venture is to show that astronauts can live for long times in self-contained ecosystems on the moon or Mars or in deep space.

■ British scientists, by inserting a single gene into a female embryo mouse, succeeded in converting it into a male mouse. Such a sex change at the embryonic stage has important implications for the study of genetics as well as for plant breeding.

■ Research on monkeys revealed that the brain compensates for injury by "rewiring" and reorganizing itself. Thus healthy protions of the brain can take up the work previously performed by the damaged part.

■ Scientists at the Indian Agricultural Research Institute achieved a long-sought breakthrough by developing hybrid cotton varieties suitable for cultivation in the North Indian states.

■ Indian Agricultural Research Institute scientists also succeeded in eliminating toxins from the notorious Kesaridal, the cultivation of which had been banned because of its link with paralysis of lower limbs. Now the pulse has been made safe for human consumption.

■ A chemist developed a simple technique to remove significant amounts of fat from ground meat. This invovles cooking the meat in vegetable oil, draining the oil, then rinsing with boiling water. Researchers found that meat treated this way contained about half the cholesterol and up to 87 percent less saturated fat than conventionally prepared meat.

■ Medical researchers claimed to have perfected a technique to freeze and preserve animals' eggs. If successful in humans, the method could extend women's child bearing years to age 50 or beyond.

■ Scientists say they have isolated the gene for a brain protein that is sensitive to cocaine, a new development that could lead to a treatment for addiction.

■ There was good news for millions of diabetics that a "plastic pancreas" had been developed that performs the functions of the natural one, including the crucial task of regulating levels of blood sugar.

■ British scientists succeeded for the first time in growing human hair in the laboratory.

■ A British-Swedish company announced its plans of mass producing a family size electric car in 1993.

■ Japan's Fugitsu company introduced a pocket-size mobile telephone that is only about five inches long and weighs 10 ounces.

■ Intel Corporation of the U.S.A. announced the world's fastest and biggest microprocessor (computer chip) yet, the first to contain over 2.5 million transistors.

■ A group of Indian biomedical engineers developed a cheap computer screen for the blind that can convert any given text in English into its braille equivalent. The researchers are now trying to adopt their software to the various Indian languages.

■ U.K. Telecom, a British company, introduced the Phone Fax, a coin-operated device for mass public use, which is simultaneously a phone, fax and photocopying machine. The device is about the same size as a regular pay phone.

■ NCR Corporation of U.S.A. introduced a powerful portable computer that is controlled by writing on its screen with a special pen instead of typing on a keyboard. The machine is about the size of a large note-book and weighs about nine kilograms.

POLLS FOR THE 10TH LOK SABHA

A comprehensive analysis of the 1991 general elections showed that the Congress performed worse than in any other election barring the 1977 post-Emergency debacle. However, it still emerged as the single largest party because of the marked upswing in its fortunes after the assassination of Rajiv Gandhi and a divided opposition.

The emergence of Bharatiya Janatha Party as the second most powerful political force was the conspicuous outcome of 1991's mid-term poll for the 10th Lok Sabha. The trend continued through the by-elections in November.

Figures showed that the Congress voting percentage is 37.3 percent in 490 of the 511 seats for which complete data has been compiled. This marks a decline of 1.7 per cent since the last general elections. Only in the 1977 general election had the Congress got less popular support when it gained 34.5 per cent of the votes.

If despite this drop in votes, the Congress still survived, it may well be because of a remarkable recovery in the post-Rajiv phase polls. In the first election phase held on May 20, the party bagged only 55 of the 211 seats. In the second phase in June, the party obtained 169 of the 294 seats. In terms of voter percentage, the Congress support rose by nearly 10 per cent, from 31.6 to 41.3 per cent over the two stages.

In the five states where polling was held both, before and after the assassination, support for the Congress registered a marked increase in the second phase. For example, in Andhra Pradesh, in the 17 constituencies where polling was held in May, the Congress voting percentage was over 42 per cent which was more than eight per cent down on its 1989 showing. In the remaining 24 constituencies, the Congress percentage went up to over 48 per cent. In May, the Congress won only four seats in Andhra, but won 21 more seats in June.

The rise in support for the Congress was even more dramatic in Madhya Pradesh and Rajasthan in the post-assassination period. In both these states the Congress voting percentage was over 50 per cent in those constituencies which went to the polls in June. The result was that the Congress won 10 out of 12 constituencies in MP and eight out of 10 in Rajasthan which went to the polls in June.

Even in Bihar and Uttar Pradesh, the two states where the party was virtually decimated, the Congress did garner some additional support after the assassination. In Bihar, for example, the Congress percentage was only 19 per cent in the 33 constituencies which went to the polls in May. But in June, the Congress staged a come-back of sorts by gaining over 31 per cent.

Of those states which went to the polls only in June, the Congress performance would seem to be the most remarkable in Maharashtra and Tamil Nadu. While in Maharashtra, the party won over 48 per cent of the vote (up three per cent since 1989), in Tamil Nadu, the Congress-AIADMK combine won over 60 per cent of the vote.

This upward trend in Congress support did not adversely affect any single party. In Uttar Pradesh, it was the Janata Dal which suffered most by losing more than eight per cent of its support in the second phase. In Andhra, on the other hand, it was the Telugu Desam who found its support decline by nine per cent in the post-Rajiv election. In the first phase, the Telugu Desam had won 11 of the 17 seats, ,but in the June election it could add only three more.

In both Uttar Pradesh and Andhra, the BJP vote remained almost identical before and after the assassination. But in Madhya Pradesh and Rajasthan, the BJP dropped by around four per cent after the assassination.

In Maharashtra too, the slight swing in favour of the Congress was enough to enable the party to win every marginal seat. Last time, there were at least six seats in Maharashtra where the margin of victory was 25,000 or less. The fact that the opposition was divided, unlike in 1989 when a rough understanding was reached in many constituencies, enabled the Congress to add nine seats to its earlier tally of 28 seats.

In fact, a disunited opposition seemed to have worked in favour of the Congress in all states, barring Uttar Pradesh and Bihar. Here, the swing away from the Congress was so substantial–in U.P., the party got only 18 per cent of the votes–that even the fragmented non-Congress votes were large enough to push the Congress into third place.

On the other hand, in Karnataka, although the swing away from the Congress was nearly seven per cent, the party still gained 21 of the 26 seats. This is because the party already had a steady support base of well over 40 per cent in Karnataka, as indeed it has had in most of the states south of the Vindhyas. As a result, a divided opposition had a much smaller vote bank to share.

The index of opposition unity (IOU)–a statistical measure of the strength of the non-Congress opposition–had declined by 10 points from the 1989 election in the absence of seat adjustment. This is seen to have given the Congress a three per cent swing in its favour. Thus, even though the Congress voting percentage fell by around 1.5 per cent, the net all-India gain was 1.5 per cent because of the IOU. This translated itself into 25 additional seats (the Congress won 224 seats where they had won 197 seats last time).

But while it is apparent that a divided opposition helped the Congress, it is not certain that it was a sympathy wave which worked in the party's favour after Mr. Gandhi's death. Firstly, voter turn-out all over the country did not rise in the second phase, as should have been the case if there was a groundswell of sympathy for the departed leader. This would suggest that the voter was just as disillusioned with the electoral process before the assassination of Rajiv, as he was after it. If anything, the tragic event had confused him even more.

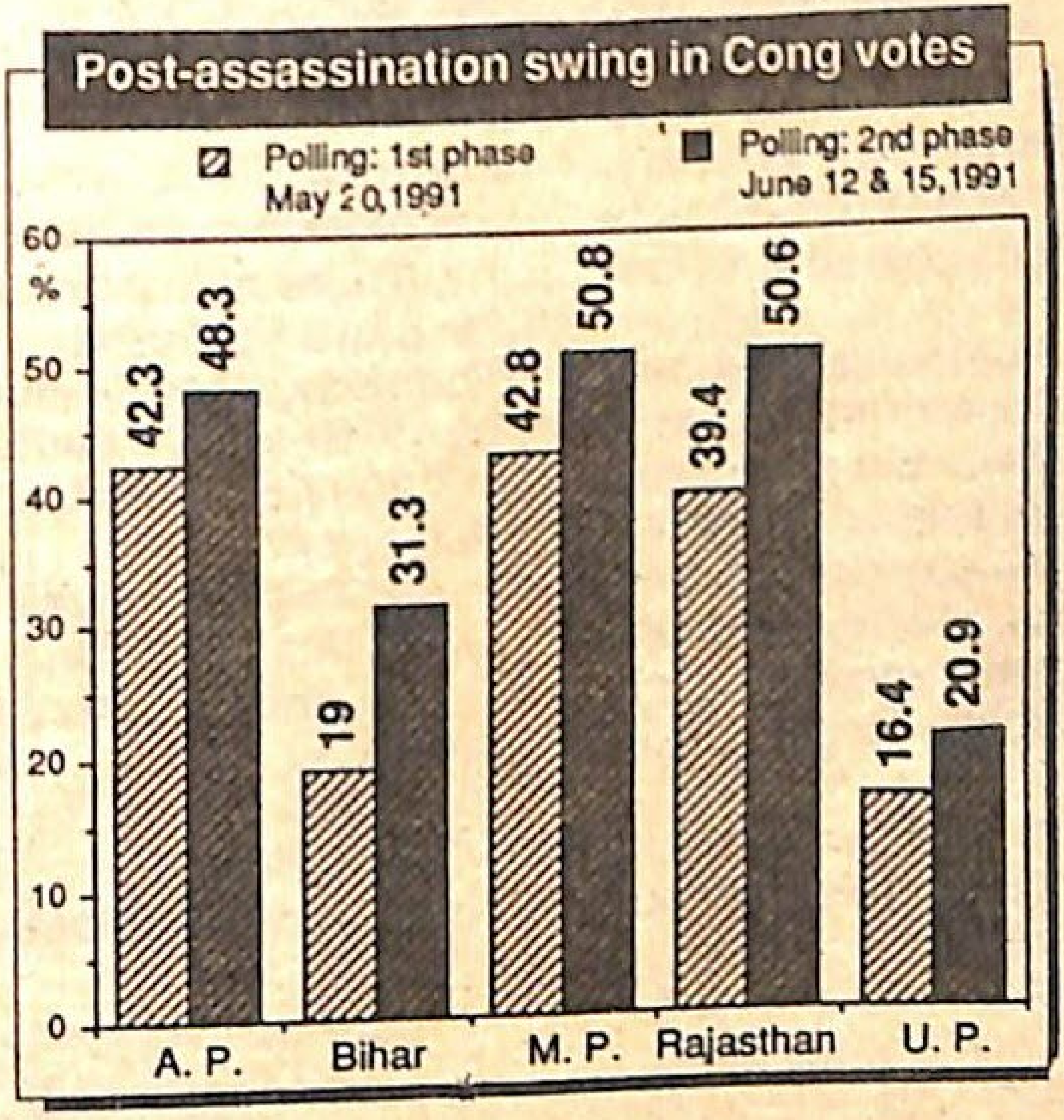
Secondly, most of the constituencies which went to the polls in the second phase, especially in the south, were Congress strongholds where the party was expected to do well right from the beginning. It may only then just be a coincidence that elections were held in many traditional Congress bastions after Mr. Gandhi's assassination.

The Bharatiya Janata Party (BJP) derived some satisfaction from the fact that it doubled its vote percentage in the elections, to clearly emerge as a major all-India party. But its inability to make deeper inroads in most of the southern states meant that the party is still some way short of coming to power at the Centre.

Its 22.9 per cent vote represents the BJP's pinnacle in electoral politics. It suggest a major breakthrough for a party, the popular support for which in the past had been between 5 and 10 per cent, though in 1977 as part of the Janata Party aliance the party had got over 40 per cent of the vote.

However, the doubling in popular support is not necessarily seen as a true measure of the BJP's rise. In 1989, the BJP had contested only 225 seats. In 1991 the party put up candidates in 473 constituencies, so the upward trend in its all-India support base was only to be expected.

In Assam, the party won two seats for the first time and got almost nine per cent of the popular vote. Although in West Bengal the party got no seats, it saw a swing in its favour of nearly eight per cent.


Post-assassination swing in Cong votes

But the BJP's most impressive preformance was in Karnataka, Uttar Pradesh and Gujarat. In all these states the BJP vote went up by over 20 per cent. In Karnataka, where the party bagged as many as four seats for the first time, its percentage rose to over 28 per cent from only two per cent in the 1989 polls. The increase is not quite 14-fold though, since the BJP contested only five seats in 1989 as against all 28 in 1991.

Gujarat represents the BJP's most spectacular showing. It is the only state where the BJP vote has actually crossed the 50 per cent mark for the first time. The party bagged 20 of the 26 seats there.

However, the party had still much to be perturbed about. Firstly, although the BJP increased its popular support, its seats did not increase proportionately, moving up from 85 to 119 seats. In fact, in 45 per cent of the seats where the BJP was victorious in 1989, it tasted defeat this time.

This suggested that, although the BJP entered new frontiers, it also lost out in many of its strongholds. It is also apparent that the BJP derived the greatest benefit in the last election from seat adjustments with other non-Congress opposition parties. In 1989, all but 21 seats in the Hindi heartland and Gujarat remanied "unadjusted". Now, in the absence of one-to-one contests, the BJP lost out in most of northern India, barring Uttar Pradesh and Delhi.

Secondly, the BJP got less than ten per cent of the votes in all the southern states, barring Karnataka. In Orissa too, the party ended up below the 10 per cent mark. This would indicate that the BJP's highly distorted geographical structure persists, with the party unable to attract voters in south and east India.

Thirdly, the BJP has reason to feel disappointed that its alliance with the Shiv Sena did not quite work out at the hustings in Maharashtra. The party's support base in the state remained virtually static around the 20 per cent mark there.

But the BJP clearly pushed the Janata Dal-led National Front alliance to third place. The JD ended up with barely 12 per cent of the popular vote, a decline of over four per cent since 1989. In only two states, Bihar and Orissa, did the Janata Dal cross the 30 per cent mark. In fact, these two states and the bulk of eastern Uttar Pradesh were the only places where the JD won its 55 seats. Elsewhere, it was completely dependent on regional partners like the Telugu Desam in Andhra.

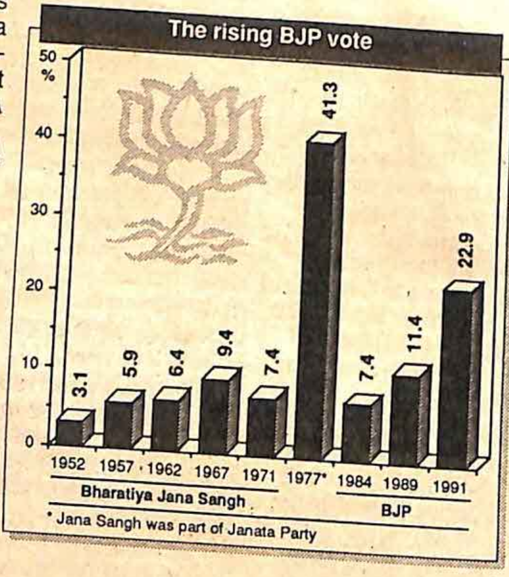
The JD vote drifted towards the Congress in some parts and to the BJP in others. In Gujarat, for example, where the JD vote fell by 23 per cent, the BJP gained a 21 per cent swing in its favour.

On the other hand, in Madhya Pradesh and Rajasthan, the collapse of the JD vote appeared to have benefited the Congress. This singular factor meant that although the BJP vote rose to over 40 per cent in both states, the anti-BJP vote which coalesced around the Congress was large enough to ensure that the BJP could not gain in its favoured territory.

In U.P., the BJP vote rose by almost 25 per cent. While the Congress vote declined by over 12 percent, the Janata Dal vote dropped by 10 per cent. This would suggest that in U.P., the BJP has taken votes from both the Janata Dal and the Congress. Not only has it broken the AJGA (Ahir, Jat, Gujjar, Rajput) alliance that had been formed by Mr. V.P. Singh in the 1989 polls, but it also captured the upper caste vote bank of the Congress.

The trend of the mid-tem poll continued in the by-election held on November 16, 1991 for 15 Lok Sabha seats and 56 Assembly seats in 14 States.

The Congress (I) topped the list with 8 seats in the Lok Sabha and 19 seats in the Assemblies. The Janata Dal won three Lok Sabha seats (all the three in Bihar) while BJP got two Lok Sabha seats and 15 Assembly seats. BSP and the Forward Block won the other two seats.


The rising BJP vote

* Jana Sangh was part of Janata Party

There are at present 7 National Parties, 29 State Parties and 13 registered parties. The recognised National Parties are:

1. Bharatiya Janata Party.
2. The Communist Party of India (Marxist).
3. The Communist Party of India.
4. Indian National Congress.
5. Indian Congress (S) (Sarat Chandra Sinha).
6. Lok Dal.
7. Janata.

First General Election 1952: In the first general election held in 1952, fifty one parties contested out of which 21 entered the Lok Sabha. The Indian National Congress won 364 seats out of 489 elective seats.

Second General Election 1957: At the second general election, the Congress secured 371 out of 494 elective seats in the Lok Sabha.

Third General Election 1962: Out of 494 parliamentary seats the Congress won 361.

Fourth General Election 1967: At the fourth general election, the performance of the Congress party was comparatively poor. It secured only 283 seats out of 520.

Fifth General Election 1971: This was a mid-term election, the Lok Sabha having been dissolved on Dec. 27, 1971, one year and two months before the expiry of the full period. The results of the elections were startling. The ruling Congress, under Indira Gandhi, swept the polls with a massive majority of 350 out of 518 elective seats.

On the 26th of June 1975 the President declared an emergency. This emergency was lifted only after the results of the sixth general election were announced, namely on 22nd March, 1977.

During the emergency, the term of the Lok Sabha was extended to 6 years by the 42nd amendement. This extension was annulled by the 43rd amendment in 1977 and the old term of 5 years was restored.

Sixth General Election 1977: The 6th General elections (March 1977) brought the Janata government to power. Janata won more than 296 seats in a total of 542-a clear majority-while the Congress could muster only 153 seats.

Party Position Lok Sabha

November, 1991

Total Seats	543
Election held	526
Congress-I	230
BJP	121
Janata Dal	56
CPM	34
CPI	13
Telugu Desam	13
Anna DMK	11
Jharkand Mukthi Morcha	6
SJP	5
RSP	4
Shiv Sena	4
Forward Block	4
Muslim League	2
Janata Dal (G)	1
Congress-S	1
Haryana Vikas Party	1
Bahujan Samaj Party	2
Asom Gana Parishad	1
ASDC	1
Manipur People's Party	1
Nagaland People's Conference	1
Kerala Congress (M)	1
Independent & others	13

Seventh General Election 1980: The 7th general elections (January 1980) returned Indira Gandhi to power again with a two-thirds majority in the Lok Sabha. The Congress (I) won 353 seats in a total of 542.

Eighth General Election 1984: Polling was held on 24th. 27th and 28th December 1984 in 508 constituencies. In a landslide victory the ruling Congress (I) lead by Mr. Rajiv Gandhi secured 401 seats.

Ninth General Election 1989: Polling held from November 22 for 523 seats out of a total of 543. For the first time the 18-year-olds were able to exercise their franchise. It resulted in a 'hung' Parliament where Congress (I) emerged as the largest party with 193 seats and Janata Dal as the second largest with 141 seats. For the first time, in India, a minority government led-by JD's V.P. Singh supported by BJP from outside was formed.

Tenth General Election 1991: A mid-term poll for the 10th Lok Sabha was held on May 20, June 15, 1991. Polling took place in 516 out of 543 constituencies; Election in 5 constituencies was cancelled. The result again lead to a 'hung' parliament with the Congress securing 224 seats, BJP 119 seats and JD 53 seats. And once again a minority government was formed by Mr. P.V. Narasimha Rao of the Congress party. →

Rao's Feat

Prime Minister P.V. Narasimha Rao earned a place in the sun when he amassed a record margin of 5,80,297 votes in the byelection in the Nandyal Lok Sabha constitutency in Andhra Pradesh in November 1991. This is presumed to be the highest margin ever earned in an election anywhere in the world.

Former Union Minister Ram Vilas Paswan retained this distinction in 1989 Lok Sabha poll when he won with a margin of 5,04,448 votes from Hajipur in Bihar far outshipping the 424545 margin he got in 1977 during the Janata wave. He won 84.08% of the total votes polled in 1989. In 1977 the slice was 89.3%.

STATES

1. **PUNJAB** (September 1985)

Total seats	117
Elections deferred	2
Akhali Dal (N)	73
Congress (I)	32
B.J.P.	4
C.P.I.	1
Janatha	1
Independents	1

- ■ Assembly dissolved and President's rule imposed in 1986.

2. **JAMMU-KASHMIR** (March 1987)

Total seats	78
National Conference	40
Congress (I)	27
BJP	4
Muslim United Front	4
Independents	3
(One seat vacant)	

- ■ Assembly dissolved and President's rule imposed in February 1990.

3. **MEGHALAYA** (February 1988)

Total seats	60
Congress (I)	22
HPU	19
HSPDP	5
Others	4
Independents	10

4. **TRIPURA** (February 1988)

Total seats	60
Elections deferred	1
CPM	26
Congress (I)	24
Upjathi Upsamithi	7
RSP	2

5. **NAGALAND** (January 1989)

Total seats	60
Congress (I)	35
LPC	25

6. **MIZORAM** (January 1989)

Total seats	40
Congress (I)	25
MLF	14
Peoples Conference	1

7. **ANDHRA PRADESH** (November 1989)

Total seats	294
Congress (I)	180
Telugu Desam	73
CPM	8
CPI	6
BJP	5
Majlis	4
Janatha Dal	1
Independents & Others	16
Countermanded	1

8. **KARNATAKA** (November 1989)

Total seats	224
Congress (I)	177
Janatha Dal	24
BJP	4
Janatha Party (JP)	2
Anna D.M.K.	1
Muslim League	1
MES	4
Rakthasangham	2

9. **GOA** (March 1989)

Total seats	40
Congress (I)	20
MGP	18
Independents	2

10. **SIKKIM** (November 1989)

Total seats	32
Sikkim Sangram Parishad	32

11. **ARUNACHAL PRADESH** (February 1990)

Total seats	60
Congress (I)	37
Janatha Dal	11
Janatha Party	1
Independents	11

12. **BIHAR** (February 1990)

Total seats	324
Election deferred	1
Janatha Dal	122
Congress (I)	71
BJP	37
CPI	23
JMM	19
CPM	6
IPF	7
Janatha Party	3
Independents & Others	33

13. **GUJARAT** (February 1990)

Total seats	182
Janatha Dal	70
BJP	66
Congress (I)	33
Independents	12

14. **HIMACHAL PRADESH** (February 1990)

Total seats	68
BJP	44
Janatha Dal	11
Congress (I)	8
CPI	1
Independents	1

15. **MADHYA PRADESH** (February 1990)

Total seats	320
BJP	220
Congress (I)	56
Janatha Dal	28
BSP	2
CPI	3
Independents & Others	10

16. **MAHARASHTRA** (February 1990)

Total seats	288
Congress (I)	142
BJP	42

Shiv Sena	51
Janatha Dal	25
PWP	8
CPM	3
CPI	2
Congress (S)	1
RPK (K)	1
Independents & Others	13

17. MANIPUR (February 1990)

Total seats	60
Congress (I)	26
Janatha Dal	10
MPP	10
Congress (S)	6
CPI	3
KNA	2
NDP	1

18. ORISSA (February 1990)

Total seats	147
Janatha Dal	123
Congress (I)	10
BJP	2
CPI	5
CPM	1
Independents & Others	6

19. RAJASTHAN (February 1990)

Total seats	200
BJP	86
Janatha Dal	54
Congress (I)	49
CPM	1
Independents & Others	9

20. ASSAM (JUNE 1991)

Total seats	126
Election deferred	1
Congress (I)	65
Assam Gana Parishad	16
BJP	10
CPI	4
ASDC	4
SUCI	2
CPI (M)	1
Janata Dal	1
NAGP (Bodo Students Union; Bodo Peoples Action committee)	8
Independents & Others	14

21. WEST BENGAL (JUNE 1991)

Total Seats	294
Election held	294
CPI (M)	187
RSP	19
CPI	7
FB	28
JD	1
CONG (I)	43
GNLF	2
SUCI	2
DSP	1
RCP	1
MFB	1

Independents	2

22. KERALA (JUNE 1991)

Total Seats	140
Election Deferred	1
(United Democratic Front)	(89)
Congress (I)	55
Muslim League	19
Kerala Congress (M)	9
Kerala Congress (B)	2
NDP	2
CMP	1
Independent	1
(Left Democratic Front)	(50)
CPI (M)	29
CPI	12
Janata Dal	3
Congress (S)	2
RSP	2
KC (J)	1
Independent	1

23. TAMIL NADU (JUNE 1991)

Total Seats	234
AIDMK	165
Congress (I)	61
DMK	2
CPI (M)	1
CPI	1
JD	1
APTMK	1
PMK	1
Independent	1

24. HARYANA (JUNE 1991)

Total Seats	90
Congress (I)	51
SJP	16
JD	3
BJP	2
HVP	12
Independent	6

25. UTTAR PRADESH (JUNE 1991)

Total Seats	425
Election Deferred	21
BJP	209
JD	90
Congress (I)	46
SJP	30
BSP	12
CPI	4
CPI (M)	1
Shiv Sena	1
Independents	8

UNION TERRITORY

1. PONDICHERRY (JUNE 1991)

Total seats	30
Congress (I)	15
AIDMK	6
JD	1
DMK	4
CPI	1
Independents	3

STOP PRESS

Nations

Afghanisthan: Prime Minister–Fazlulha Kaliqyar.

Albania: Prime Minister– Ylli Bufi.

Algeria: Prime Minister–Sid Ahmed Ghozali.

Angola: Prime Minister– Fernado Jose France Dias Van-Dunem.

Bangladesh: President– Abdur Rahman Biswas.

Bulgaria: Prime Minister– Filip Dimitrov.

Congo: Prime Minister– Adre Milengo.

Cambodia: Head of State: Prince Norodem Sihanouk.

A South Asian Award

A new annual award for interantional understanding has been instituted by the Colombo-based Abdul Majeed Mohamed Sahabdeen Trust Foundation, incorporated by the Act of Parliament No. 3 of 1991. Known as Mohamed Sahabdeen Award for International Understanding, it carries a prize money of Sri Lanka Rs. 100, 000 to 200,000 depending on the standing of the candidates or the institution.

This is the first international award given by a Sri Lankan organization and is confined to the SAARC region.

Two more awards–Mohamed Sahabdeen Award for Science and Mohamed Sahabheen Award for Literature also have been instituted along with the first one. All carry the same prize money.

The head office of the Trust Foundation is No. 86, Galle Road, Colombo-3, Sri Lanka.

Iraq: Prime Minister– Mohammad Hamza Al Subaidi.

Japan: Prime Minister– Kiichi Miyazawa.

Jordan: Prime Minister– Zail Ibn Shaker.

Mali: Prime Minister– Soumana Sacko.

Madagascar: Prime Minister– Albert Zafy.

Niger: Prime Minister– Amadou Cheffou.

Peru: Prime Minister– Alfonso de Losthereos.

Romania: Prime Minister– Theodor Stolojan.

South Korea: Prime Minister– Chung Won Shik.

Sweden: Prime Minister– Carl Bildt.

Turkey: Prime Minister– Mesut Yilmaz.

Vietnam: Head of State– Gen. Le Duch Anh.

Zambia: President: Frederick Chiluba.

Zaire: Prime Minister– Etienne Tshisekedi Wa Mulumba.

Awards

Architect of the Year– by J.K. Cements, Rs. 100,000: Anant Damodar Raje.

Bharat Shiromani Puraskar– Rs. 50,000: Mother Teresa.

Feroz Gandhi Memorial Award–Vijay Darda, Managing Editor, Lokmat Samachar, Nagpur.

Great Masters Award– by J.K. Cements, Rs. 100,000: Laurie Baker.

G.M. Modi Award– Rs. 1.01 lakh: Prof M.M. Sharma.

G.K. Reddy Awards– for the best journalist by the Subbaram Reddy Kalapeetham Trust: H.K. Dua, Editor, Hindustan Times.

Honorary FRCS– by the Royal College of Surgeons, Edinburgh: Mother Teresa.

Indira Gandhi National Integration Award– by the Maharashtra government, Rs. 300,000: Yuvak Birandari, Bombay.

Rameshwardas Birla Smarak Kosh Award– Rs. 1 lakh: Dr. M.G. Deo, Bombay.

Sanjay Chopra Award for Bravery– Chandra Mohan, Kangra, H. Pradesh; Geeta Chopra Award for Bravery–Kumari Surmesh, Rajasthan (Posthumous).

Twelve Stars for the Environment Prize– by the European Environmental Protection Office: Prince Charles, Britain.

UNESCO Prize for literacy drive– West Bengal.

Appointments

Chief Justice of India– Justice M.H. Kania.

Intelligence Bureau Chief– V.G. Vaidya.

UNESCO, Director General– Ms. Marie Bernard: Meunier, Canada.

Refugees Turned Millionaires

Asians – mainly Indians who fled East Africa – account for upto 300 millionaires in Britian, according to a survey published in a top management magazine last year.

Arriving as penniless immigrants after independence in 1947 or on being driven out of Kenya and Uganda two decades ago, Asians today sit atop an estimated total wealth of £ 2.6 billion.

The amount is equivalent to 10 per cent of Britain's defence budget or 0.4 per cent of the country's gross domestic product, the magazine Management Today said.

The authoritative survey said 44 of the 50 richest Asians lived and worked in London with homes spreading from the posh Harrow to the posher Hampstead.

They could be working in Wembley and Southall and many would have dined with members of the royalty.

The business interest of Asians – the list is headed by the billionaire Hinduja family – is invariably dominated by property, with several notable hoteliers among them.

Also well represented in the magazine's list are Indians who came directly to Britain.

The Asian community raised £ 5 million for Prince Charles Youth Business Trust in June this year – generously exceeding a request by the Prince for a contribution of one million pounds.

But the magazine said most Asians were excluded from the British establishment in spite of their achievements.

The Times in an editorial marking the survey, drew a parallel between the success of the Jewish community in Britian with that of Asians.

"...... The overall pattern of their business still shows all the signs of a first generation's struggle to gain a foothold, just like earlier mass migrations to Britain, the Jews in particular. As subsequent generations of Jews spread out from their early business and geographical bases, so too the Asians can be expected to do likewise," it said.

Pointing out that the first wave of Asian immigration from East Africa two decades ago led to a temporary racial backlash in Britian, the newspaper said: "The presence of this busy and prosperous community is an unqualified bonus to the country that took them in so hesitatingly.

"Asians – who increasingly ought to be called Britons of Asian origin – have a selfdependent culture that scorns reliance on State handouts and looks for security in personal wealth, the editorial, titled Asian Millions, added.

However, it pointed out that the Asians' secure economic base had yet to show a proportionate social and political impact....

The daily added: "The willingness is there, but not always the invitation – the English are slow to include outsiders. The leadership of the Prince of Wales in his recent request to leading Asian businessmen to participate in his youth business trust deserves more imitation. Their response to this appeal proved both their generosity and their public spiritedness. They are eager to belong. ■

Zubin's Swan Song

Conductor Zubin Mehta's swan song with the New York Philharmonic on the night of May 30, 1991 was a spectacle of flowers, confetti and admiration from the city, the State and President George Bush.

Mr. Mehta ended his 13th season as head of the orchestra, a record in this century, before a capacity audience of 2,494 at Lincoln Centre's Avery Fisher Hall. He wrapped up his final performance with a resounding performance of Schoenberg's "Gurrelieder," a majestic though seldom-performed work for orchestra, vocal soloists and chorus.

The composition, the theme of which is man's spiritual quest for consonance with God and nature, put 291 musicians and singers on stage in a mammoth production that one of the orchestra members called "pure Zubin," in reference to the conductor's flair for the dramatic.

"He likes to get as many musicians on stage as he possibly can," they said.

That analysis perhaps provided an explanation for his choice of "Gurrelieder," a work many in the auidence had never before heard performed.

Another possible explanation was that "Gurrelieder" was composed at the end of what one orchestra member called "the romantic period," which produced works in which Mehta is said to excel.

In any case, the composition's rousing final crescendo of horns, strings, percussion and voices seemed a fitting culmination of Mehta's colourful career in New York.

During an extended intermission at his final performance, Mehta, 55, a native of Bombay, was the object of encomiums enough to inflate any ego. Mayor David Dinkins of New York said he had "touched our lives with an extraordinary grace and style" and said of New Yorkers, "we all feel a great loss" at Mehta's departure.

Governor Mario Cuomo sent a message through former singer and actress Kitty Carlisle Hart that said the conductor's "unprecedented 13-year career' with the Philharmonic had brought him "national and worldwide acclaim."

President George Bush, in a message read to the audience called Mehta "a man of the people" who gave millions the "joy of experiencing his artistry". Mr. Bush said the conductor had "helped reinvigorate and broaden the appeal of classical music."

There were many references by the speakers to the long list of honours accorded to Mehta over the years.

In responding, Mehta said: "Please forgive these interruptions." Saying he was "deeply honoured," he added, "I love this orchestra, and I will miss it very much." Of its musicians, he said, "I leave them with a heavy heart."

The concert's final hour, during which the chorus of 142 came on stage for the first time, brought the audience to a heightened state of attention, and loud and long cheers for the conductor. At times during the performance Mehta literally jumped up and down on the podium, as his baton and raised arms brought "gurrelieder" to a spectacular conclusion. ■

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सफलता
की
ओर
अग्रसर

सदैव आपके साथ

चुनिये ऐसा साधन जो पहुँचाये आपको आपके लक्ष्य तक

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